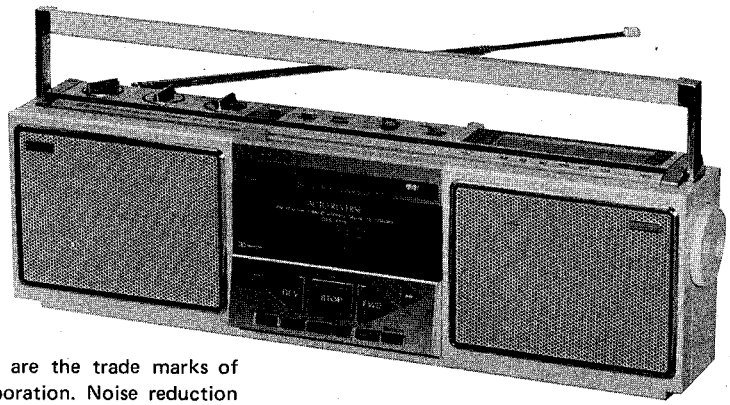
# CFS-F11S

# SERVICE MANUAL

*AEP Model*
*UK Model*
*E Model*



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

## SPECIFICATIONS

| Tape Transport Mechanism Type | MF-F11-73 |
|---|---|

**Radio section**

Frequency range
FM: 87.5–108 MHz
SW1: 5.95–6.2 MHz (49 m band)
SW2: 9.5–9.8 MHz (31 m band)
SW3: 11.7–12.0 MHz (25 m band)
SW4: 15.1–15.5 MHz (19 m band)
SW5: 17.6–18.0 MHz (16 m band)
MW: 530–1,605 kHz (566–187 m)

Antennas
FM/SW: Telescopic antenna
MW: Built-in ferrite bar antenna

**Tape recorder section and general**

Recording system: 4-track 2-channel stereo or monaural

Fast winding time: Approx. 1 min. 50 sec. with Sony Cassette C-60

Frequency response
TYPE I (NORMAL) cassette
40–14,000 Hz
TYPE II ($CrO_2$) cassette
40–15,000 Hz
TYPE IV (METAL) cassette
40–16,000 Hz

Speakers: Two approx. 10 cm (4 inches) dia.

Power output
2.5 W × 2 (at 10% harmonic distortion)
4.5 W × 2 (max.)
at dc operation

Inputs
External microphone input jack (stereo minijack)
sensitivity 0.46 mV (–65 dB)
for low impedance microphone
Mixing microphone input jack (minijack)
sensitivity 1.2 mV (–56 dB)
for low impedance microphone
Line input jack (stereo minijack)
sensitivity 0.3 V (–8.5 dB)
input impedance 47 kilohms

Outputs
Headphone jack (stereo minijack)
for 8–32-ohm impedance headphones
Line output jack (stereo minijack)
load impedance 10 kilohms or higher
rated output 0.25 V (–9.5 dB)
at load impedance 47 kilohms

Power requirements
9 V dc, six batteries IEC designation R14 (size C)
DC IN 9 V jack accepts:
AC-230A ac power adaptor supplied with the United Kingdom model, for use on 240 V ac, 50 Hz
AC-230A ac power adaptor supplied with the Continental European model, for use on 220 V ac, 50 Hz
AC-190A ac power adaptor supplied with Japan tourist model and the other country model, for use on 110, 120, 220 or 240 V ac, 50/60 Hz
DCC-120 car battery cord (optional) for use on 12 V car battery
DCC-240 car battery cord (optional) for use on 24 V car battery

Battery life
Approx. 2 hours with Sony SUM-2(NS) New Super batteries
Approx. 4 hours with Sony Eveready AM2 Alkaline batteries

— Continued on page 2 —

## FM/MW/SW STEREO CASSETTE-CORDER

SONY®

TC

MICROFILM

| | |
|---|---|
| Dimensions | Approx. 418 × 128.5 × 89 mm (w/h/d)<br>($16^1/_2 \times 5^1/_8 \times 3^5/_8$ inches)<br>not incl. projecting parts and controls<br>Approx. 424 × 134.5 × 105 mm (w/h/d)<br>($16^3/_4 \times 5^5/_8 \times 4^1/_4$ inches)<br>incl. projecting parts and controls<br>not incl. handle |
| Weight | Approx. 2.9 kg (6 lb 6 oz)<br>incl. batteries |

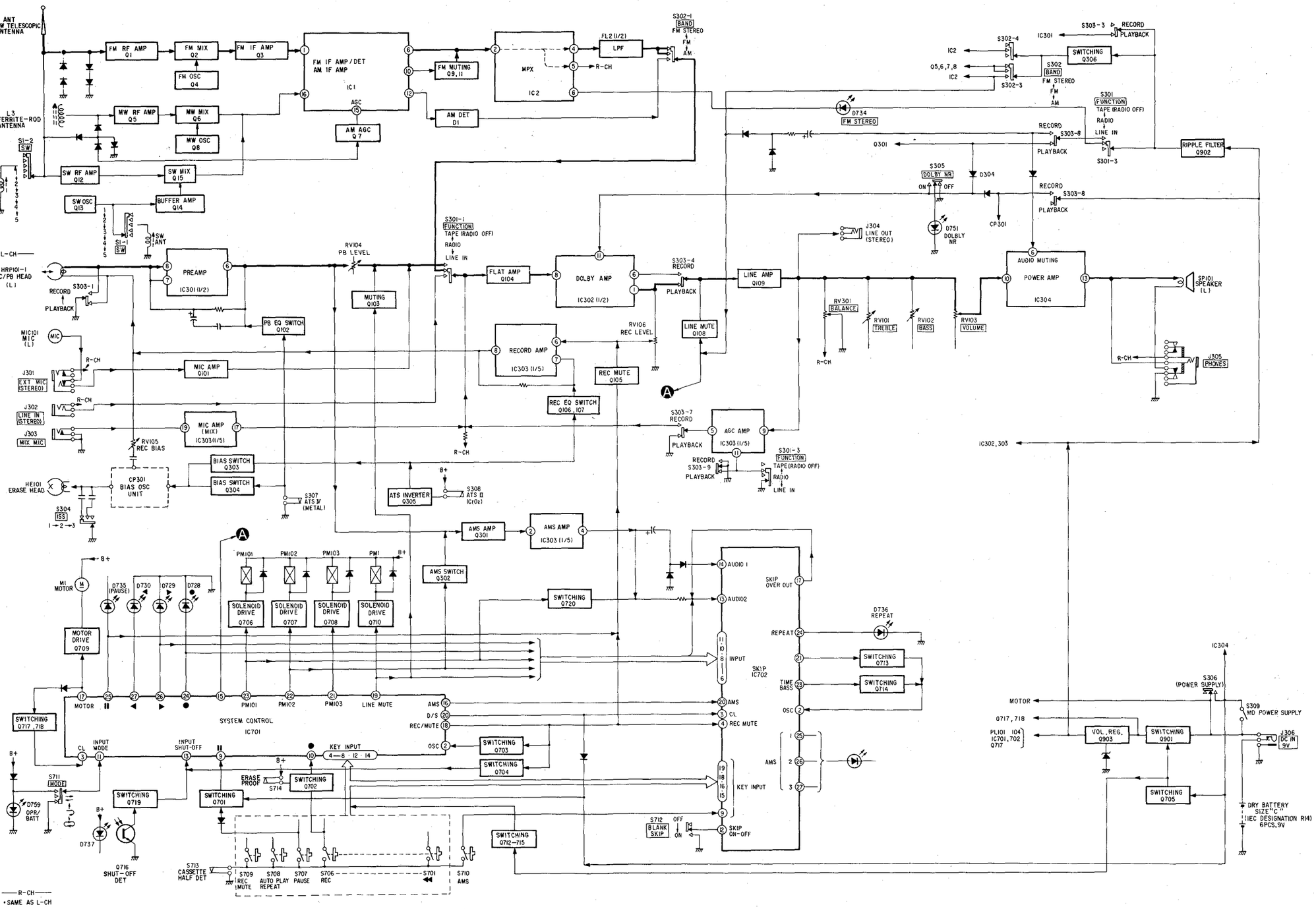
**0dB = 0.775V**

## FEATURES

- A stereo cassette-corder combined with a high-quality FM, MW and five SW band radio.
- Auto-reverse system enables you to play both sides of the cassette back continuously without turning the cassette round.
- Dolby NR* system for reducing the tape noise.
- Blank skip function for playing back only the recorded portions of the tape while skipping long blank spaces in either fast-forward or rewind mode.
- Automatic Music Sensor (AMS) system for locating a selection as far ahead, or as far back, as 3 selections.
- Auto-repeat function for playing a particular selection three times.
- Auto-play function for replaying the tape promptly after it is rewound to the beginning.
- Automatic Tape Selector (ATS) allows different types of tape to be recorded or played back at the optimum setting.
- All-mode shut-off mechanism activates at the end of the tape in any operating mode.
- Record muting operation for creating blank intervals on the tape during recording, eliminating unwanted material.
- Full-logic feather-touch tape operation mode select buttons for direct switching from one mode to another without going through the stop mode.
- Mixing microphone jack for mixing the sound from an external microphone with other sound sources.
- Three different power sources—batteries, house current, and car battery.

# SECTION 1
# OUTLINE

## 1-1. BLOCK DIAGRAM

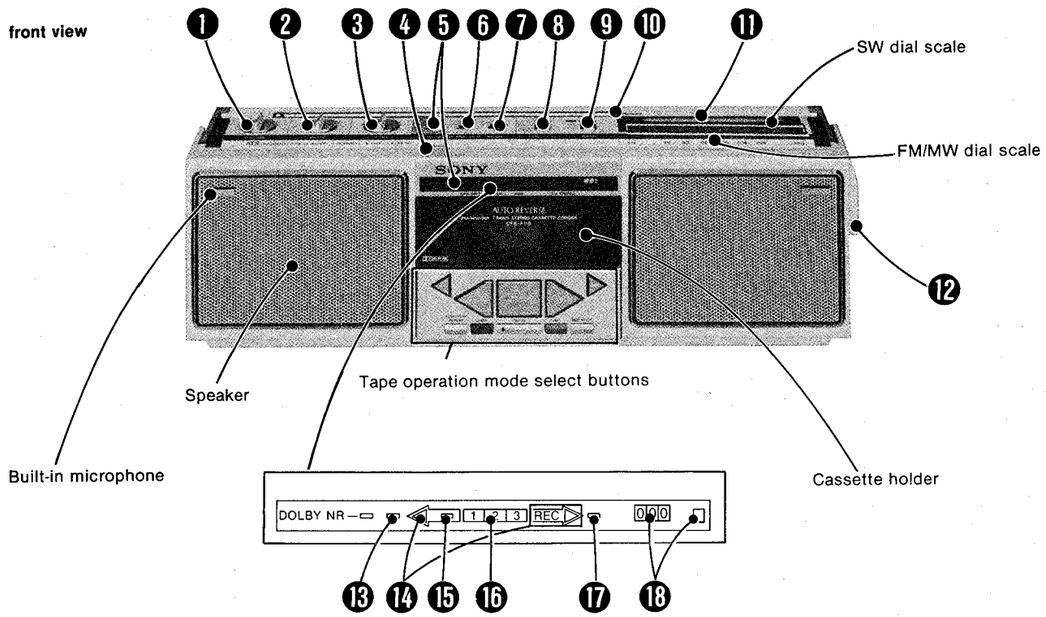



● **SAME AS L-CH**

CFS-F11S

## LOCATION AND FUNCTION OF CONTROLS

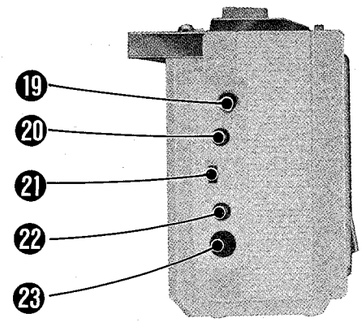
front view



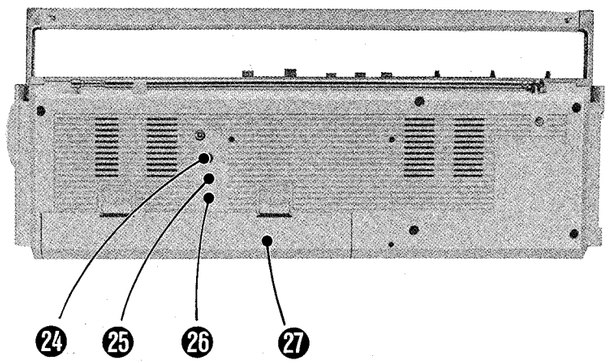

❶ VOLUME control
❷ BASS control
❸ TREBLE control
❹ EJECT button
❺ DOLBY NR switch and indicator
❻ BLANK SKIP/FM MODE switch
❼ MODE (tape playback mode) selector
❽ FUNCTION selector
❾ BAND selector
❿ Telescopic antenna
⓫ SW band selector
⓬ Tuning knob
⓭ OPR/BATT indicator
⓮ Tape direction indicators and REC (recording) indicator
⓯ REPEAT indicator
⓰ AMS indicator
⓱ FM STEREO indicator
⓲ Tape counter and reset button



left side




rear view



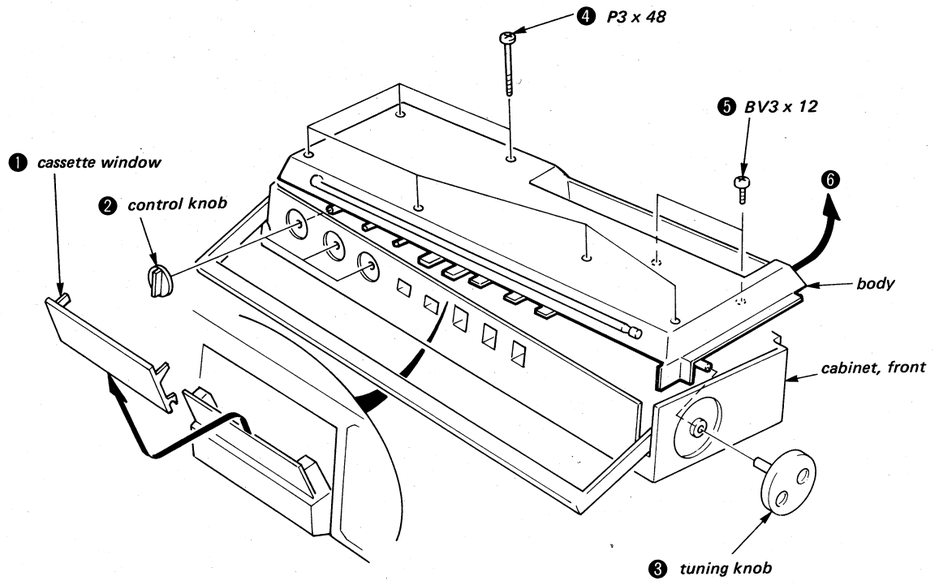

⓳ BALANCE control
⓴ LINE OUT (line output) jack (stereo minijack)
㉑ ISS (interference suppress switch)
㉒ PHONES jack
㉓ DC IN 9 V (external power input) jack
㉔ MIX MIC (mixing microphone input) jack (minijack)
㉕ EXT MIC (external microphone input) jack (stereo minijack)
㉖ LINE IN (line input) jack (stereo minijack)
㉗ Battery compartment

# SECTION 2
# DISASSEMBLY

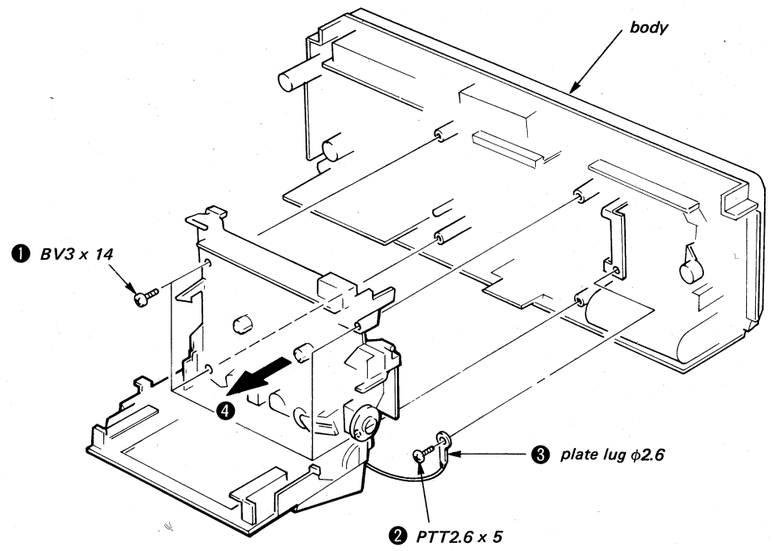
## 2-1. REMOVAL

**Disassemble in numerical order when applicable.**

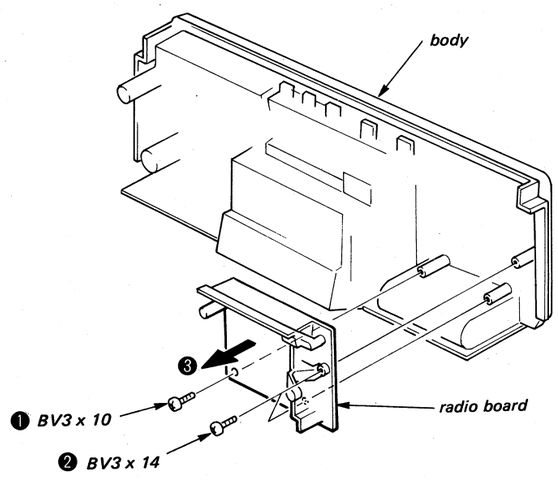
### CABINET FRONT



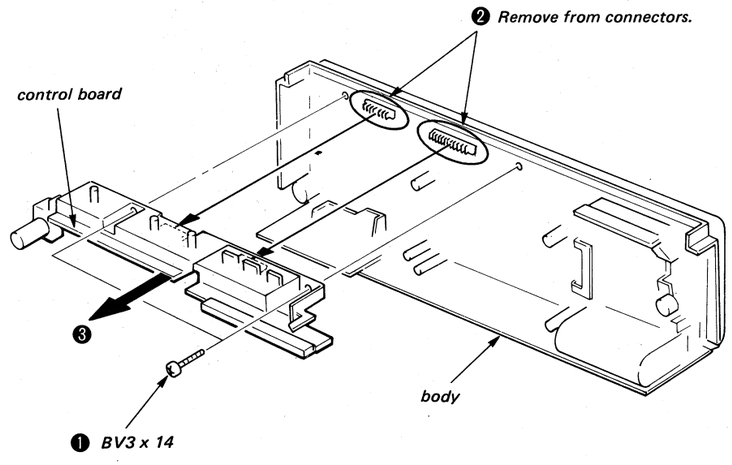

### MECHANICAL DECK



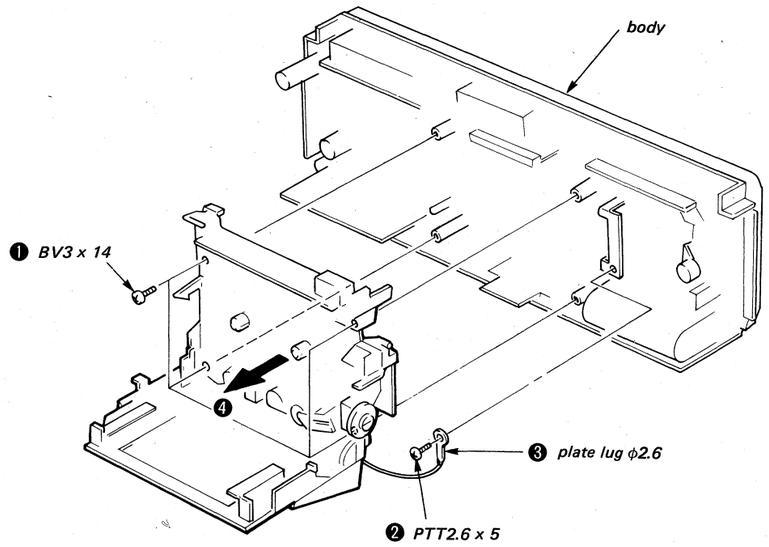

### RADIO BOARD



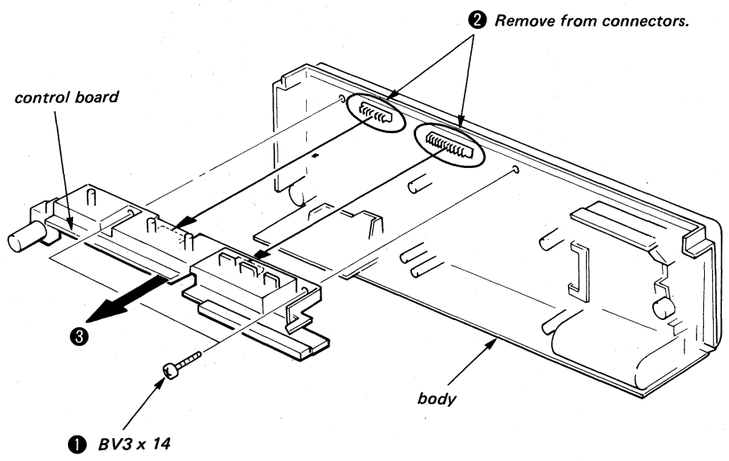

### CONTROL BOARD



## MECHANICAL DECK




## CONTROL BOARD

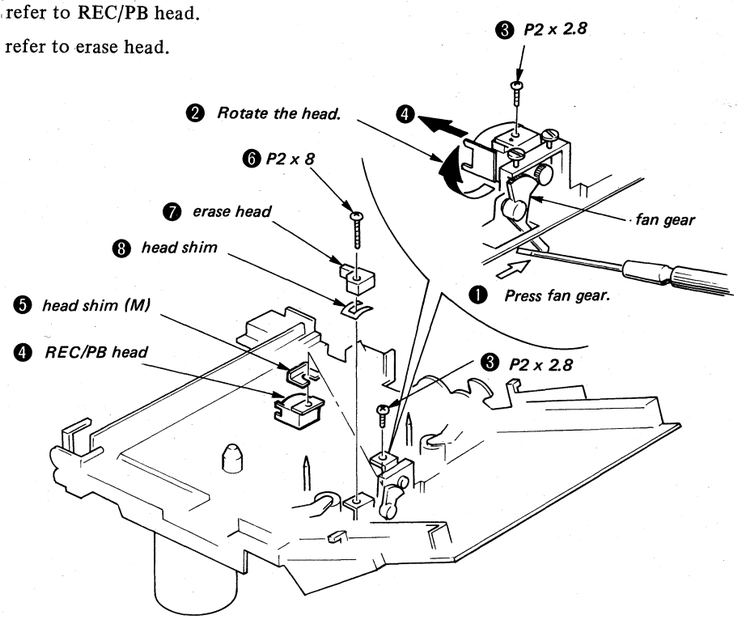




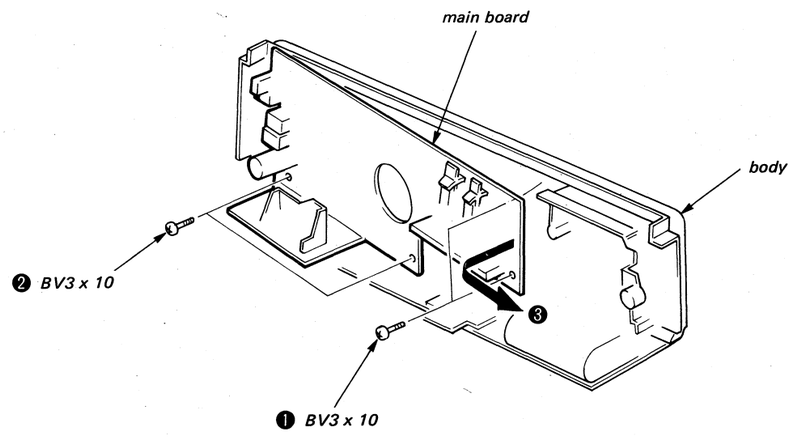



## REC/PB HEAD / ERASE HEAD

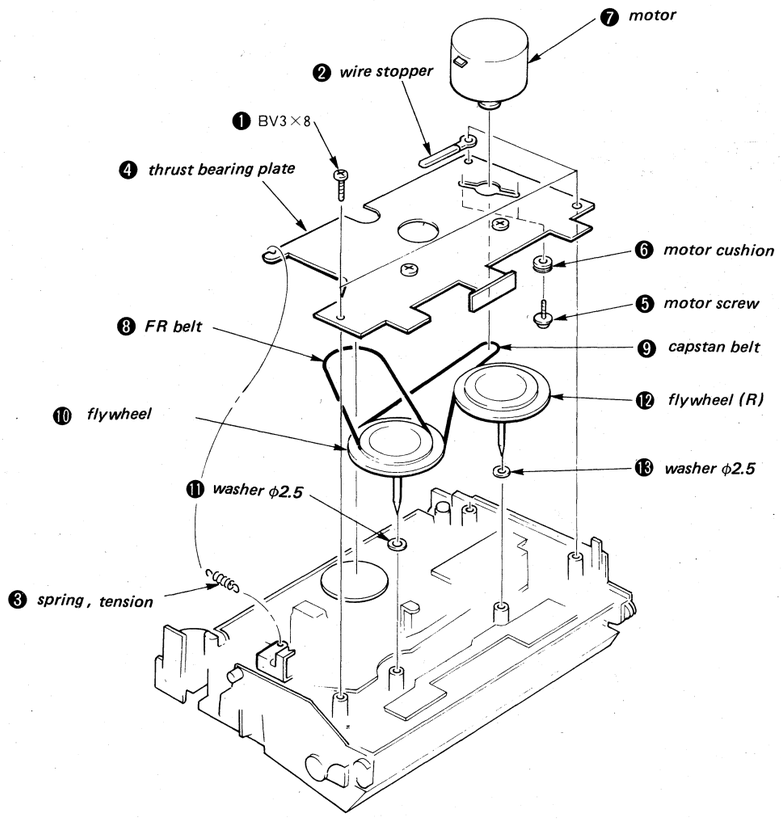
❶~❺ refer to REC/PB head.
❻~❽ refer to erase head.




## AUDIO BOARD



## THRUST BEARING PLATE/MOTOR FLYWHEEL

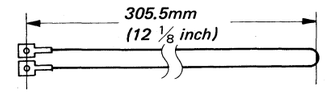






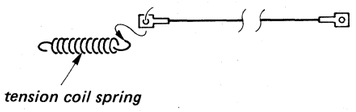

## 2-2. DIAL CORD THREADING

**1. Dial cord preparation:**



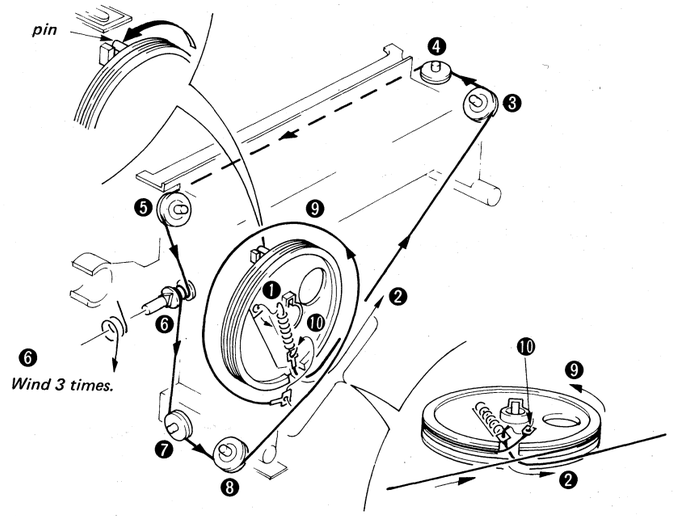

**2. Dial cord threading**

1) Hook tension coil spring on dial cord.

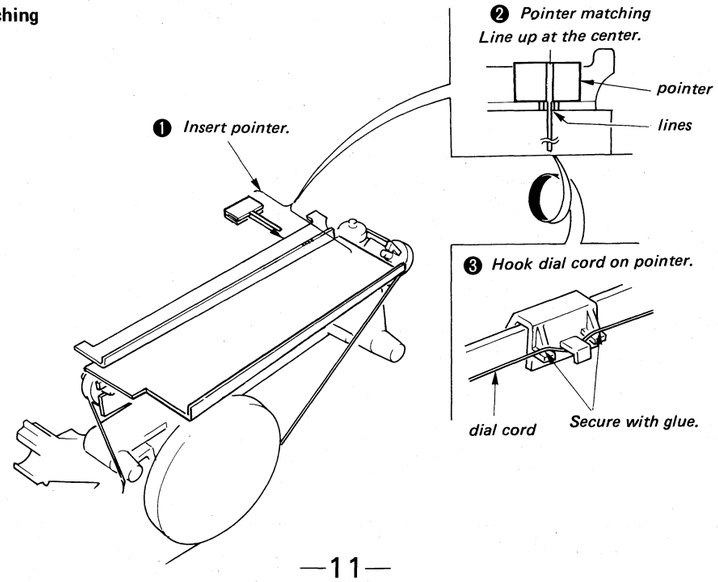



2) Rotate drum counterclockwise until it touches the pin.

3) Thread cord following steps ❶~⓬.




**3. Pointer matching**



# SECTION 3
# ADJUSTMENTS

## 3-1. MECHANICAL ADJUSTMENT

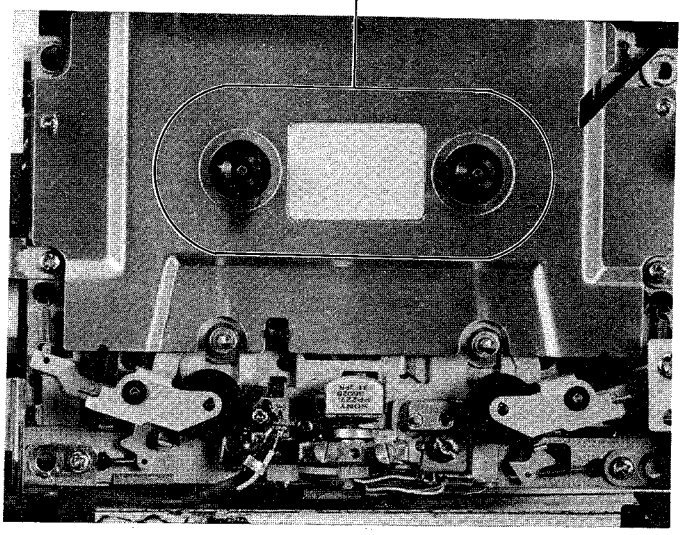
### Notes

1. Before adjusting, wipe the following parts with a cloth moistened with alcohol.

   | | |
   |---|---|
   | REC/PB head | pinch roller |
   | erase head | rubber belt |
   | capstan | idler |

2. Degauss the REC/PB head with a head degausser.
3. Do not use a magnetized screwdriver for adjustments.
4. After adjusting, screw lock the adjusted parts.
5. Unless otherwise indicated, perform adjustments at specified voltage.

| Torque | Torque Meter | Measured Value |
|---|---|---|
| FWD torque | CQ102C | 24 – 55 g·cm (0.33 – 0.76 oz·inch) |
| FWD back tension torque | CQ102C | 2 – 5 g·cm (0.33 – 0.76 oz·inch) |
| REV torque | CQ102R B | 24 – 55 g·cm (0.33 – 0.76 oz·inch) |
| REV back tension torque | CQ102R B | 1.5 – 5 g·cm (0.02 – 0.07 oz·inch) |
| FF-REW torque | CQ201B | 75 – 130 g·cm (1.04 – 1.80 oz·inch) |



### Head Height Adjustment

Be sure to perform this adjustment when replacing the erase head, head mounting table assembly, or REC/PB head.

– PB mode –

1. Use a mirror cassette and adjust so that there is no tape curl.
2. Change the head mounting table assembly height adjustment shim and REC/PB head height adjustment shim so that the REC/PB head core position is correct for both FWD/REV.

Erase Head Height Adjustment Shim

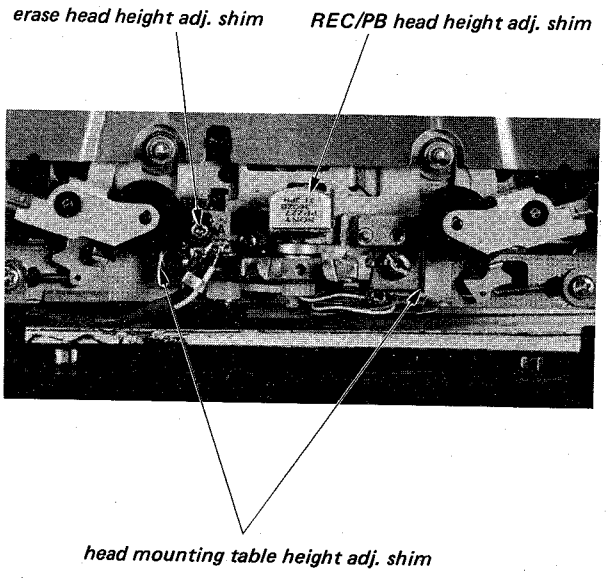
| Part No. | t |
|---|---|
| 3-573-466-01 | 0.1 |
| 3-573-466-11 | 0.2 |

Head Mounting Table Height Adjustment Shim

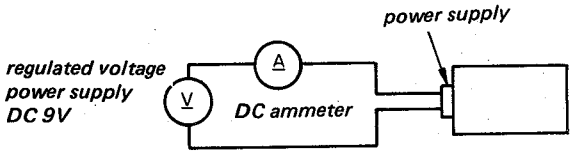
| Part No. | t |
|---|---|
| 3-313-757-01 | 0.1 |
| 3-313-757-11 | 0.15 |
| 3-313-757-21 | 0.2 |

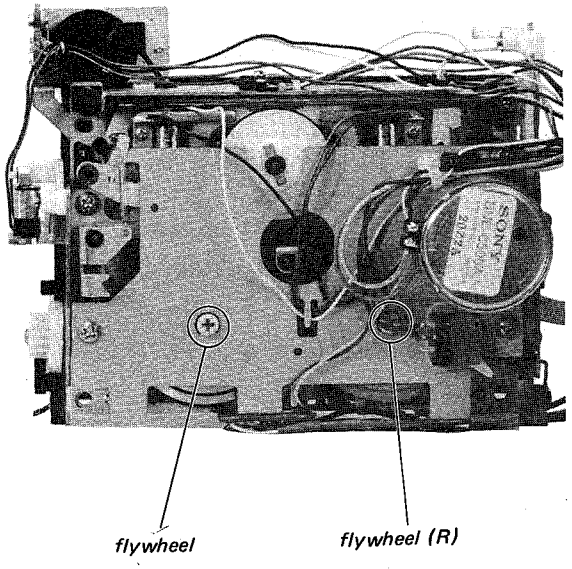
REC/PB Head Height Adjustment Shim

| Part No. | t |
|---|---|
| 3-331-758-01 | 0.1 |
| 3-331-758-11 | 0.15 |
| 3-331-758-21 | 0.2 |



### Thrust Play Adjustment

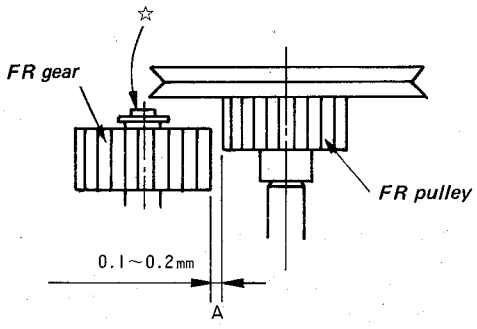



1. Loosen the adjustment screw by turning counter-clockwise.
2. Put in FWD mode and turn the adjustment screw clockwise little by little to tighten.
3. Current will increase suddenly at a certain point. Loosen ¼ turn from this point and set.
4. After adjustment, lock the screw.
   Referecne: thrust screw pitch
   0.5mm/1 rotation
   Specification: flywheel · flywheel (R)
   within 0.2 – 0.4mm

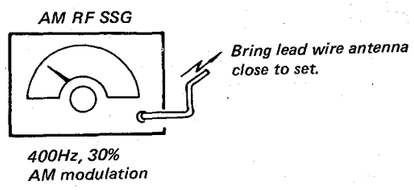
### RF Gear Clearance Adjustment

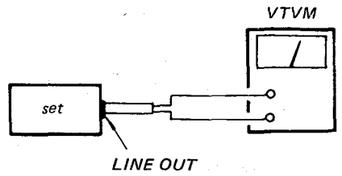
Put in STOP mode, and bend the part marked ☆ so that the value A is 0.1 – 0.2mm.



## 3-2. ELECTRICAL ADJUSTMENT

### MW SECTION

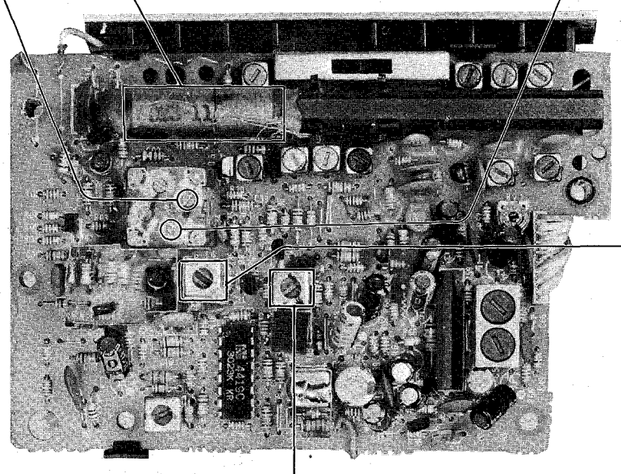



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

| MW TRACKING ADJUSTMENT | |
|---|---|
| Adjust for maximum reading on VTVM. | |
| 1,400kHz | 620kHz |
| CT3 | L3 |

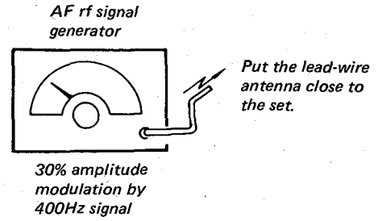
| MW FREQUENCY COVERAGE ADJUSTMENT | |
|---|---|
| Adjust for maximum reading on VTVM. | |
| 1,650kHz | 520kHz |
| CT4 | T4 |

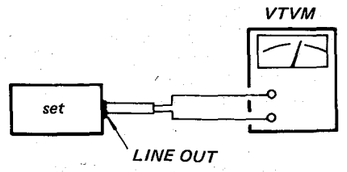


| | |
|---|---|
| T3 | 455kHz |
| Adjust for a maximum reading on VTVM. | |
| IF ALIGNMENT | |



### SW SECTION



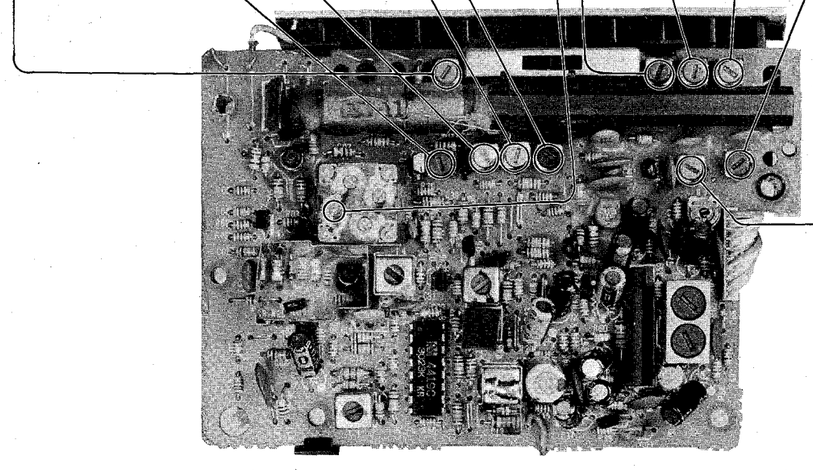




- Repeat the procedures in each adjustment several times, and the frequency coverage adjustments should be finally done by the trimmer capacitors.

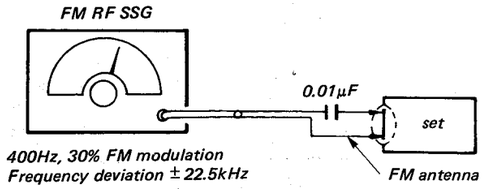
| SW1 FREQUENCY COVERAGE ADJUSTMENT | |
|---|---|
| Adjust for maximum reading on VTVM. | |
| 6.25MHz | 5.9MHz |
| CT5 | L15 |

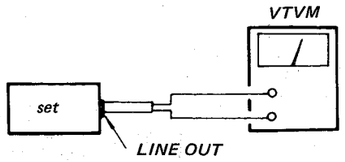
| SW TRACKING ADJUSTMENT | | | | |
|---|---|---|---|---|
| Adjust for maximum reading on VTVM. | | | | |
| SW5 | SW4 | SW3 | SW2 | SW1 |
| 17.8MHz | 15.3MHz | 11.85MHz | 9.65MHz | 6.07MHz |
| L6 | L7 | L8 | L9 | L10 |

| SW FREQUENCY COVERAGE ADJUSTMENT | | | |
|---|---|---|---|
| Adjust for maximum reading on VTVM. | | | |
| SW2 | SW3 | SW4 | SW5 |
| 9.65MHz | 11.8MHz | 15.3MHz | 17.8MHz |
| L14 | L13 | L12 | L11 |



## FM SECTION

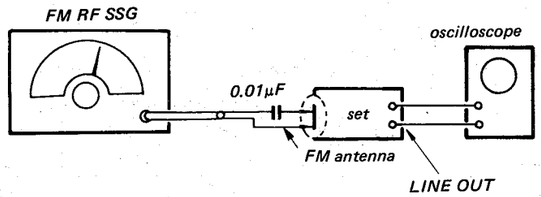



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

### FM Discriminator Adjustment

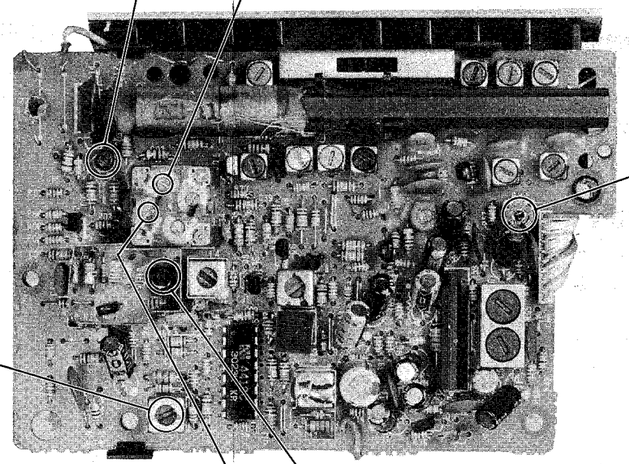
**Procedure:**




*Carrie frequency:* 98MHz
*Modulation:* 1kHz, 25kHz deviation (100%)
*Output Level:* 1mV (60dB)
*Mode:* monaural

1. Tune to 98MHz.
2. Adjust T1 so that the top and bottom of the waveform are symmetrical.

| FM TRACKING ADJUSTMENT | |
|---|---|
| Adjust for maximum reading on VTVM. | |
| 86.5MHz | 109.5MHz |
| L1 | CT1 |

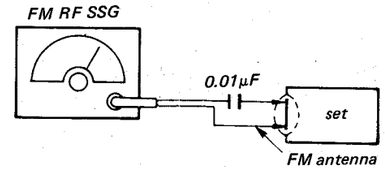



| CT2 | L2 |
|---|---|
| 109.5MHz | 86.5MHz |
| Adjust for maximum reading on VTVM. | |
| FM FREQUENCY COVERAGE ADJUSTMENT | |

### VCO Adjustment

**A) Regular Method**

**Procedure:**



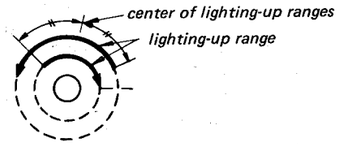

*Carrie frequency:* 98MHz
*Modulation:* demodulated
*Output level:* 1mV (60dB)

1. Tune to 98MHz.
2. Adjust RV1 so that the frequency counter reading is 19kHz $^{+0.1}_{-0.5}$kHz.

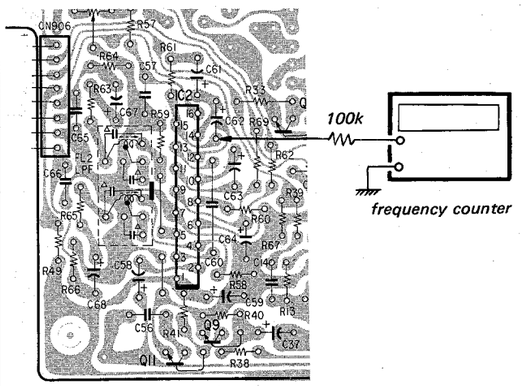
**B) Simple Method**

**Procedure:**

1. Receive an FM stereo broadcast.
2. Turn RV1 left and right, and set at the midpoint of where the stereo lamp lit intervals overlap.




**Adjustment Location:** Radio Board



## TC SECTION

1. Perform adjustment in the order given. (As a general rule, perform recording system adjustment after completing playback system adjustment.)
2. Unless otherwise indicated, perform adjustment and measurement for each channel.

- Switch, control knob positions

FUNCTION . . . . . .TAPE
TAPE SELECT . . . . . .TYPE I (NORM)
DOLBY NR . . . . . .OFF
ISS . . . . . .2
VOLUME . . . . . .minimum
BASS, TREBLE . . . . .mechanical center
BALANCE. . . . . .mechanical center

- Specified recording position

Adjust the VOLUME knob to obtain the following specified input/output signal levels.

Specified input level

| Input pin | MIC | LINE IN |
|---|---|---|
| Signal level impedance | 300Ω | 10kΩ |
| Input signal level | 0.77mV (–60dB) | 0.29V (–8.5dB) |

Specified output level

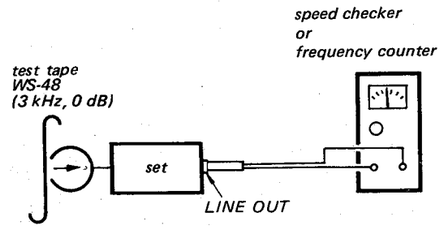
| Output pin | SP OUT | LINE OUT |
|---|---|---|
| Load impedance | 3.2Ω | 47kΩ |
| Output signal level | 0.775V (0dB) | 0.26V (–9.5dB) |

**0dB = 0.775V**

### Tape Speed Adjustment

**Procedure:**

– FWD PB mode –

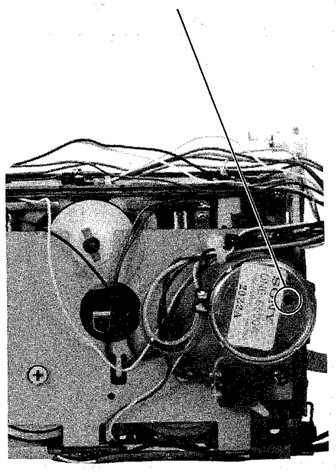



**Specification:**

3,000Hz $^{+3}_{-2.5}$%

Adjust so that frequency difference of beginning of winding and end of winding is 1% (30Hz).

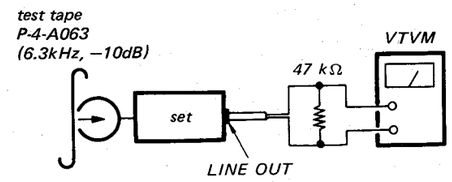
**Adjustment Location:** Adjust variable resistor inside motor.
(Insert screwdriver to adjust. Speed increases when turned clockwise.)



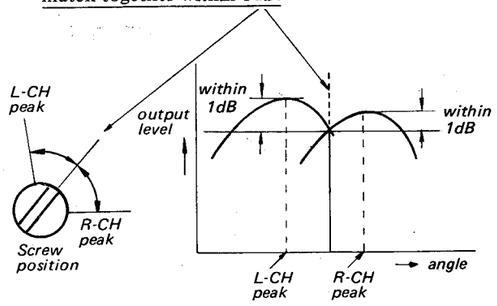
### Record/playback Head Azimuth Adjustment

**Procedure:**

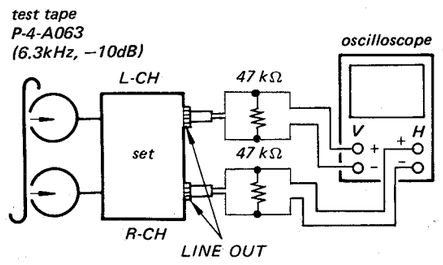
1. Mode: playback

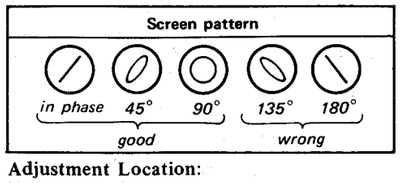



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

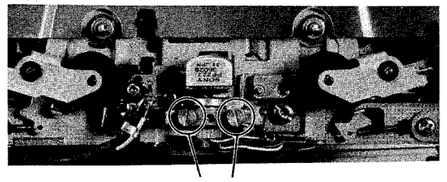



3. Phase Check
Mode: playback



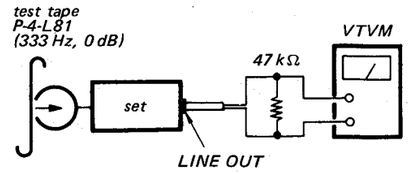

**Adjustment Location:**




### Playback Level Adjustment

**Procedure:**

– Playback mode –

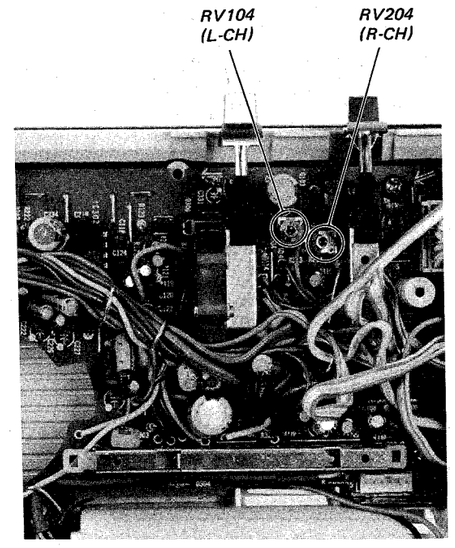



**Specification:**

LINE OUT level: 0.23 – 0.26V
(–9.7 to –9.3dB)
Level difference between channels:
within 0.5dB

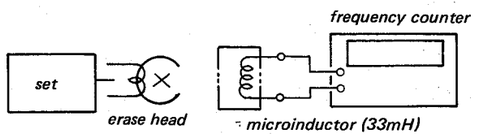
Confirm that LINE OUT level does not change when playback, STOP are repeated.

**Adjustment Location:** Audio board



## REC Bias Oscillation Frequency Adjustment

**Procedure:**

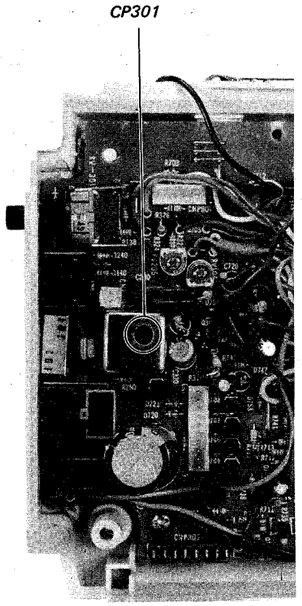



1. Set for no signal recording state.
2. Bring the microinductor connected to the frequency counter close to the erase head core.
3. Adjust CP301 so that the ISS switches have the following frequencies.

**Adjustment Values:**

ISS switch 1: 81.0kHz ± 1.5kHz
ISS switch 2: 84.5kHz ± 0.2kHz
ISS switch 3: 87.5kHz ± 1.5kHz

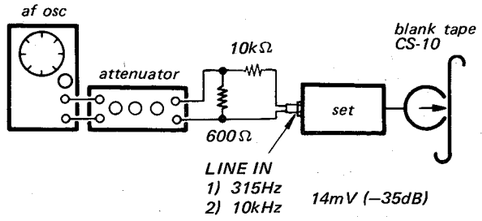
**Adjustment Location:** Audio board



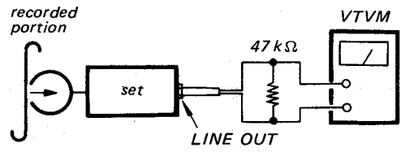

## Record Bias Adjustment

**Procedure:**

1. Mode: record

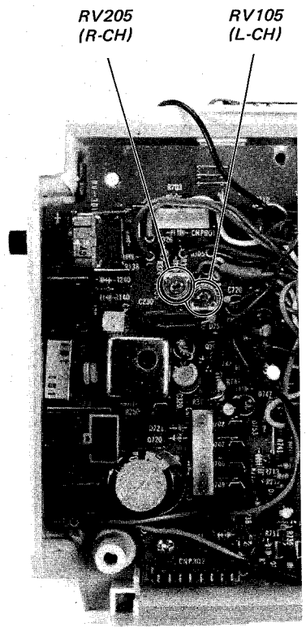



2. Mode: playback




Adjust RV105 (L-CH) and RV205 (R-CH) so that the 10kHz playback output difference is 1dB ± 0.5dB relative to 315Hz playback output.

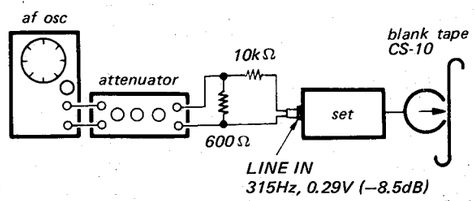
**Adjustment Location:** Audio board



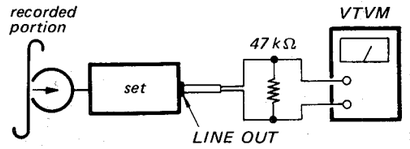

## Record Level Adjustment

**Procedure:**

1. Mode: record



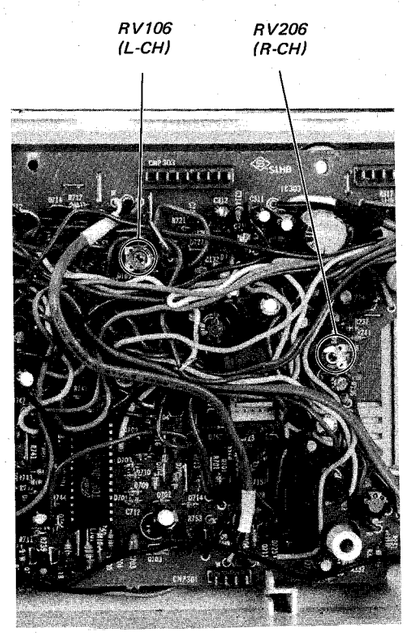

2. Mode: playback




**Specification:**

LINE OUT level: 0.25 – 0.27V
(–10 to –9dB)

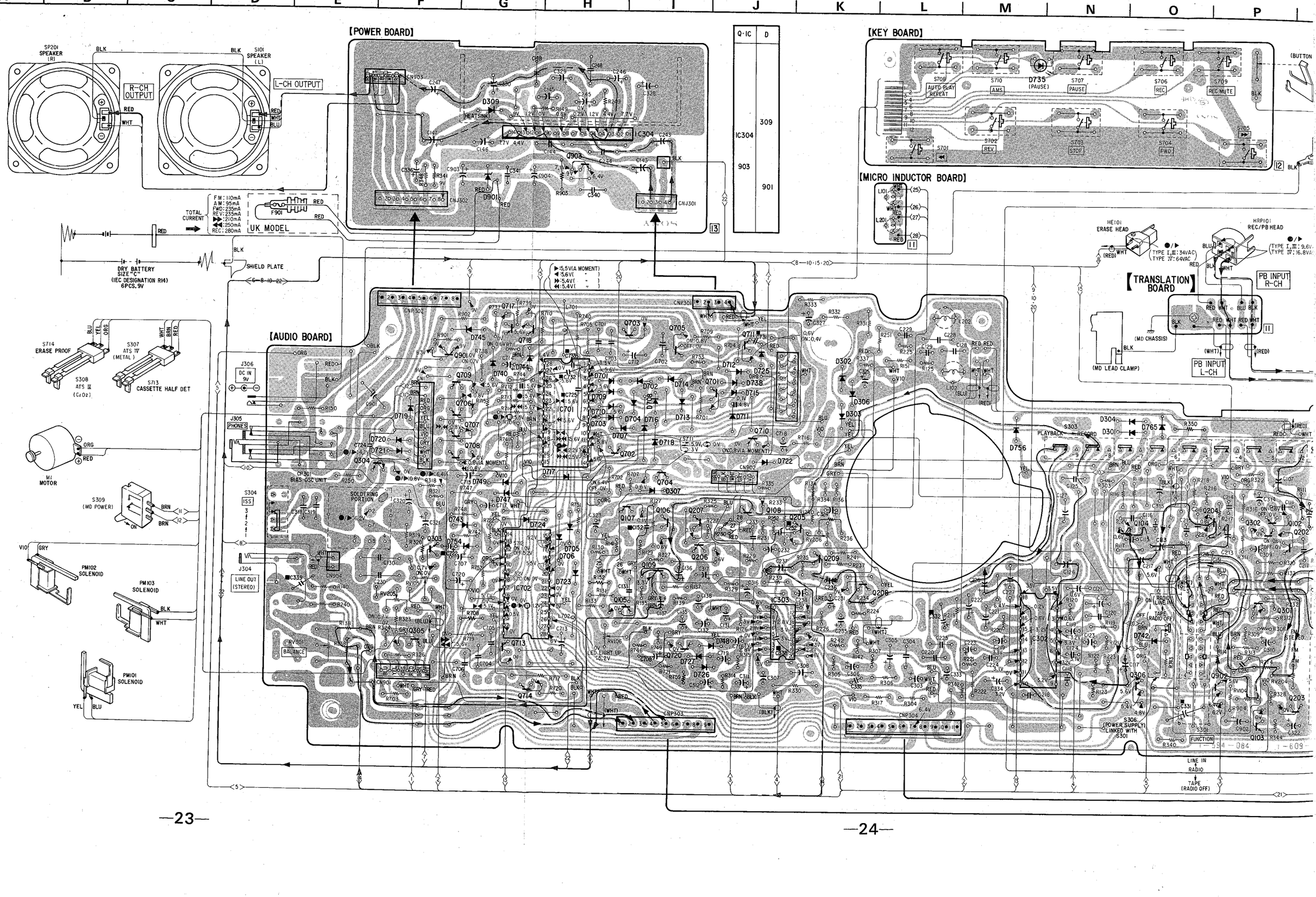
**Adjustment Location:** Audio board



## 4-1. MOUNTING DIAGRAM
*– Conductor Side –*

# SECTION 4
# DIAGRAMS

Semiconductor Lead Layouts: See page 34.



O P Q R S T U V W X Y Z A1 B1 C1 D1

1 2 3 4 5 6 7 8 9 10

【SHUT-OFF BOARD】

【JACK BOARD】

【RADIO BOARD】

【TRANSLATION BOARD】

【PLUNGER BOARD】

【CONTROL BOARD】

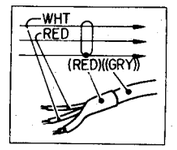
| Q・IC | D |
|---|---|
| 717, 718 | 745 |
| 703,705, 711 | 712,725 |
| 901 | 740,744 |
| 709 | 701,702,714 738,302,710 |
| 701 | 709 715,306 710,704,708 |
| 706, IC701 | 713,303 |
| 707 | 719 304 703,756 301 707,716 |
| 710 | 720, 718 |
| 708 702 | 721 307 722 |
| 304,704 | 717 |
| IC301 | 749 |
| 107 108 | 747 |
| 102 | 743,724,705 |
| 104,204,302 | |
| 106,207,205 202 | 754,706 |
| 303 206 | 723 |
| IC702,109 209,208 | |
| 301 | |
| 105 | |
| IC303, IC302 | 742 |
| | 748 |
| 305,713,720 | 727 726 305 |
| 714,306 902 | |
| 103,203 | |

SELECT TO YIELD ※OPTIMUM PERFORMANCE

| IC1 | R38 |
|---|---|
| GRN MARK | 2.2k |
| YEL MARK | 3k |
| ORG MARK | 3.9k |
| BLU MARK | 5.1k |

**Note:**

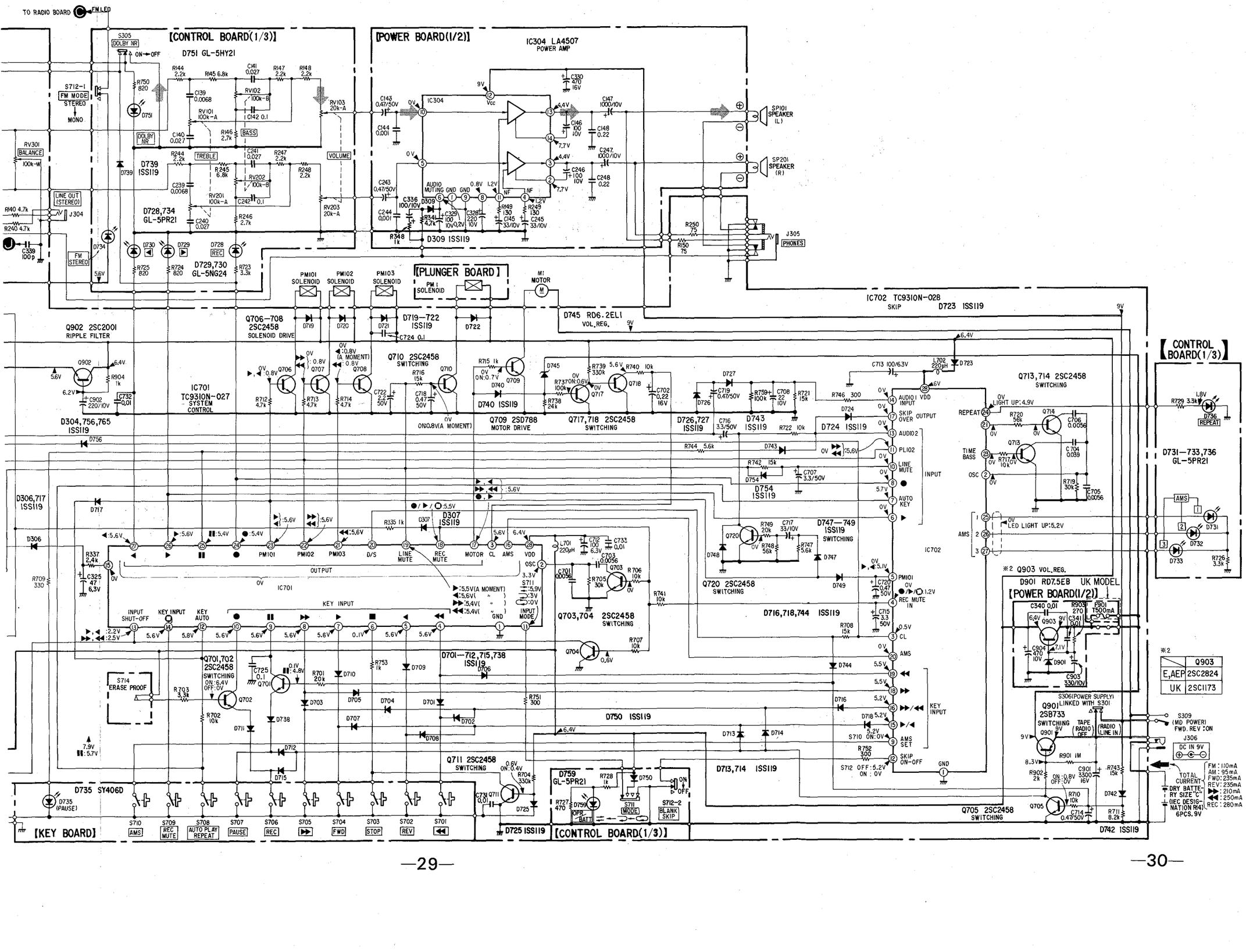
- Color code of sleeving over the end of the jacket.



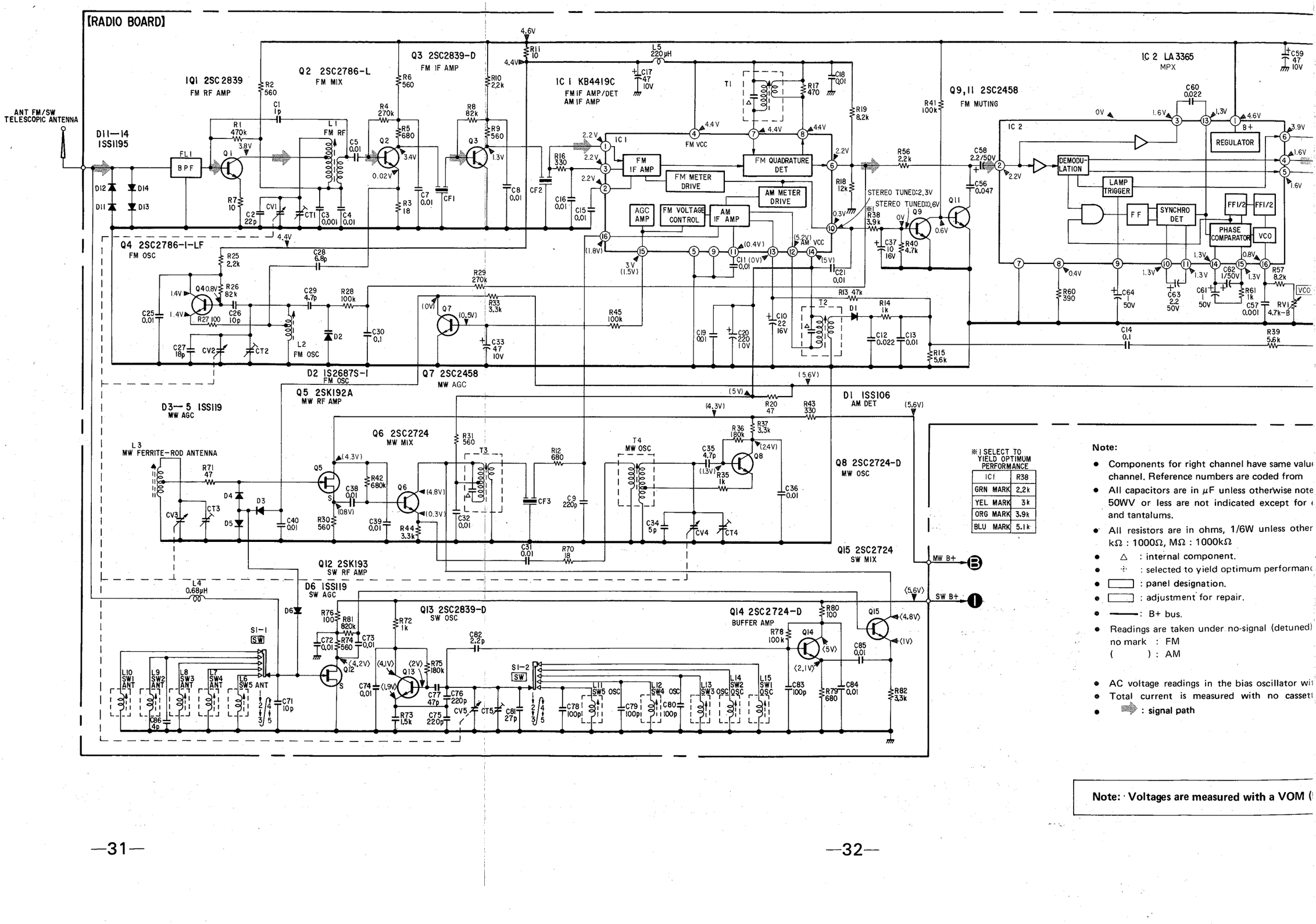

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- [ ]— : indicates side identified with part number.
- ▒ : B+ pattern
- ▬▬▶ : signal path
- ▬▬▶ : L-CH signal path
- ▬·▬▶ : R-CH signal path
- ※ : selected to yield optimum performance.

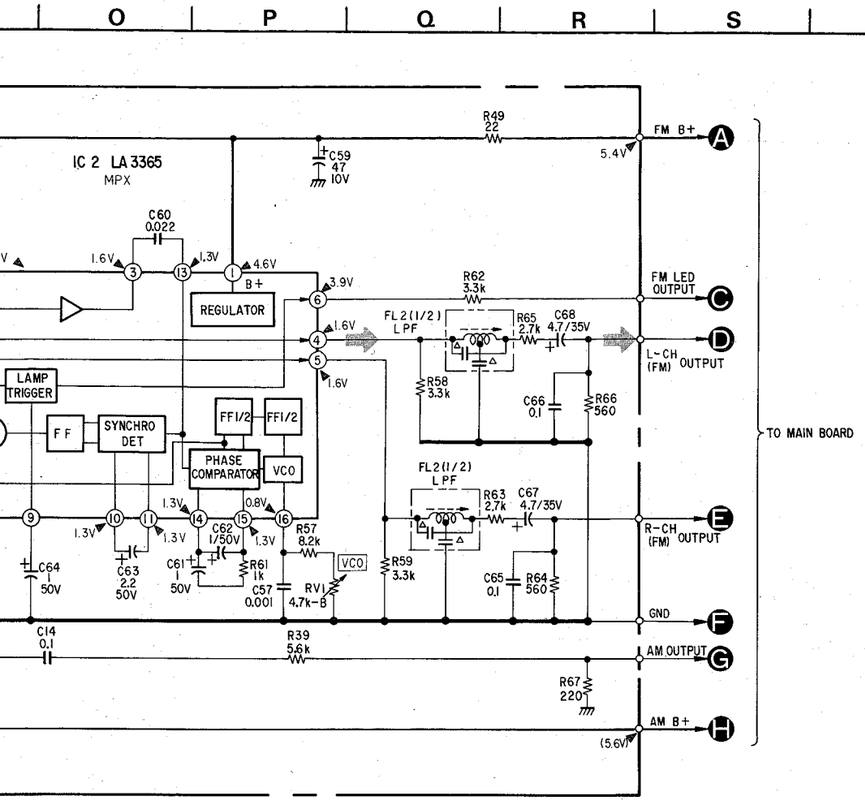
## 4-3. SCHEMATIC DIAGRAM — AUDIO SECTION —

• See page 33 for notes.


TO RADIO BOARD
FM LED
[CONTROL BOARD(1/3)]
S305 DOLBY NR
D751 GL-5HY21
S712-1 FM MODE STEREO MONO
RV301 BALANCE 100k-W
LINE OUT (STEREO) J304
FM STEREO
D739 ISS119
D728,734 GL-5PR21
D729,730 GL-5NG24
TREBLE
BASS
VOLUME
DOLBY NR
[POWER BOARD(1/2)]
IC304 LA4507 POWER AMP
SP101 SPEAKER (L)
SP201 SPEAKER (R)
J305 PHONES
D309 ISS119
[PLUNGER BOARD]
PM1 SOLENOID
PM101 SOLENOID
PM102 SOLENOID
PM103 SOLENOID
M1 MOTOR
D745 RD6.2EL1 VOL.REG.
Q902 2SC2001 RIPPLE FILTER
IC701 TC9310N-027 SYSTEM CONTROL
D304,756,765 ISS119
Q706-708 2SC2458 SOLENOID DRIVE
D719-722 ISS119
Q710 2SC2458 SWITCHING
Q709 2SD788 MOTOR DRIVE
Q717,718 2SC2458 SWITCHING
D740 ISS119
D726,727 ISS119
D743 ISS119
D724 ISS119
D754 ISS119
IC702 TC9310N-028 SKIP
D723 ISS119
Q713,714 2SC2458 SWITCHING
【CONTROL BOARD(1/3)】
D731-733,736 GL-5PR21
D306,717 ISS119
D307 ISS119
D747-749 ISS119 SWITCHING
Q720 2SC2458 SWITCHING
D716,718,744 ISS119
※2 Q903 VOL.REG.
D901 RD7.5EB UK MODEL
[POWER BOARD(1/2)]
S306(POWER SUPPLY) Q901 LINKED WITH S301
Q901 2SB733 SWITCHING
S309 (MD POWER) FWD. REV :ON
J306 DC IN 9V
TOTAL CURRENT
DRY BATTERY SIZE "C" (IEC DESIGNATION R14) 6PCS. 9V
FM : 110mA
AM : 95mA
FWD: 235mA
REV: 235mA
▶▶: 210mA
◀◀: 250mA
REC : 280mA
Q701,702 2SC2458 SWITCHING
Q703,704 2SC2458 SWITCHING
Q711 2SC2458 SWITCHING
Q705 2SC2458 SWITCHING
D701-712,715,738 ISS119
D750 ISS119
D713,714 ISS119
D759 GL-5PR21
D735 SY406D (PAUSE)
[KEY BOARD]
S710 AMS
S709 REC MUTE
S708 AUTO PLAY REPEAT
S707 PAUSE
S706 REC
S705 ▶▶
S704 FWD
S703 STOP
S702 REV
S701 ◀◀
S714 ERASE PROOF
S712-2 BLANK SKIP
S711 MODE
D725 ISS119
D742 ISS119
※2
Q903
E,AEP 2SC2824
UK 2SC1173

## 4-2. SCHEMATIC DIAGRAM – RADIO SECTION –


[RADIO BOARD]
ANT FM/SW TELESCOPIC ANTENNA
D11–14 1SS1195
FL1 BPF
IQ1 2SC2839 FM RF AMP
Q2 2SC2786-L FM MIX
Q3 2SC2839-D FM IF AMP
IC1 KB4419C FM IF AMP/DET AM IF AMP
T1
L5 220µH
IC2 LA3365 MPX
Q9,11 2SC2458 FM MUTING
REGULATOR
DEMODULATION
LAMP TRIGGER
FF
SYNCHRO DET
PHASE COMPARATOR
VCO
FM IF AMP
FM METER DRIVE
FM QUADRATURE DET
AM METER DRIVE
AGC AMP
FM VOLTAGE CONTROL
AM IF AMP
Q4 2SC2786-I-LF FM OSC
D2 1S2687S-I FM OSC
Q7 2SC2458 MW AGC
Q5 2SK192A MW RF AMP
D3–5 1SS119 MW AGC
D1 1SS106 AM DET
Q6 2SC2724 MW MIX
T2
T3
T4
Q8 2SC2724-D MW OSC
L3 MW FERRITE-ROD ANTENNA
Q12 2SK193 SW RF AMP
D6 1SS119 SW AGC
Q13 2SC2839-D SW OSC
Q14 2SC2724-D BUFFER AMP
Q15 2SC2724 SW MIX
L4 0.68µH
S1-1 SW
S1-2 SW
L10 SW1 ANT
L9 SW2 ANT
L8 SW3 ANT
L7 SW4 ANT
L6 SW5 ANT
L11 SW5 OSC
L12 SW4 OSC
L13 SW3 OSC
L14 SW2 OSC
L15 SW1 OSC
MW B+
SW B+
VCO
※1 SELECT TO YIELD OPTIMUM PERFORMANCE
IC1 | R38
GRN MARK | 2.2k
YEL MARK | 3k
ORG MARK | 3.9k
BLU MARK | 5.1k
Note:
• Components for right channel have same valu channel. Reference numbers are coded from
• All capacitors are in µF unless otherwise note 50WV or less are not indicated except for and tantalums.
• All resistors are in ohms, 1/6W unless other kΩ : 1000Ω, MΩ : 1000kΩ
• △ : internal component.
• ⊹ : selected to yield optimum performanc
• ▭ : panel designation.
• ▭ : adjustment for repair.
• ——— : B+ bus.
• Readings are taken under no-signal (detuned) no mark : FM ( ) : AM
• AC voltage readings in the bias oscillator wi
• Total current is measured with no casset
• ➡ : signal path
Note: Voltages are measured with a VOM




ote:

Components for right channel have same values as for left channel. Reference numbers are coded from

All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.

All resistors are in ohms, 1/6W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ

△ : internal component.

⁘ : selected to yield optimum performance.

▭ : panel designation.

▭ : adjustment for repair.

——: B+ bus.

Readings are taken under no-signal (detuned) conditions.
no mark : FM
( ) : AM

AC voltage readings in the bias oscillator with a VTVM. Total current is measured with no cassette installed.

➡ : signal path

**ote: Voltages are measured with a VOM (50kΩ/V).**

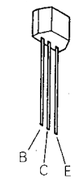
- Switch

| Ref. No. | Switch | Position |
|---|---|---|
| S1 | SW | SW1 |
| S301 | FUNCTION | RADIO |
| S302 | BAND | FM STEREO |
| S303 | RECORD/PLAYBACK | PLAYBACK |
| S304 | ISS | 1 |
| S305 | DOLBY NR | ON |
| S307 | ATS IV | OFF |
| S308 | ATS II | OFF |
| S309 | MD POWER | OFF |
| S701 | ◀◀ | OFF |
| S702 | REV | OFF |
| S703 | STOP | OFF |
| S704 | FWD | OFF |
| S705 | ▶▶ | OFF |
| S706 | REC | OFF |
| S707 | PAUSE | OFF |
| S708 | AUTO PLAY REPEAT | OFF |
| S709 | REC MUTE | OFF |
| S710 | AMS | OFF |
| S711 | MODE | ↻ |
| S712-1 | FM MODE | STEREO |
| S712-2 | BLANK SKIP | ON |
| S713 | CASSETTE HARF DET | OFF |
| S714 | ERASE PROOF | OFF |

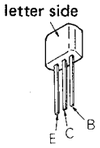


- Semiconductor Lead Layouts

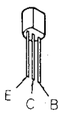
**2SC2458L-BL**
**2SA1048-GR**
**2SC2458**
**2SC2724**
**2SC2724-D**
**2SC2839**
**2SC2839-D**




**2SC2786-1-LF**
**2SC2786-L**

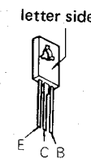



**2SC2001**
**2SD788**

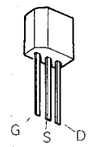



**2SB733**

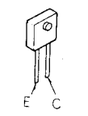
**2SC2824**



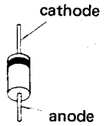

**2SK192A**



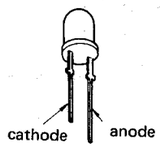

**PH103**



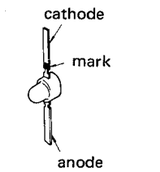

**1S1555**
**1S2687S-1**
**1SS106**
**1SS119**
**RD6.2EL1**
**RD7.5EB1**



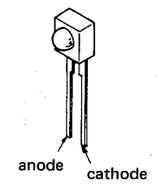

**GL-5HY21**
**GL-5NG24**
**GL-5PR21**



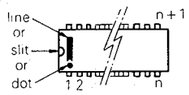

**SY406D**




**TLR213**

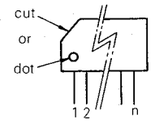



**HA12047**
**KB4419C**
**LA3365**
**TC9310N-027**
**TC9310N-028**

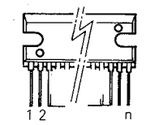



(Top view)

**LA3160**

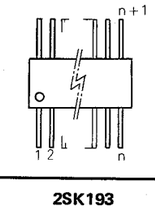



**LA4507**

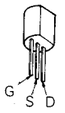



(Marking side view)

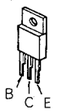
**TK10562F**




**2SK193**

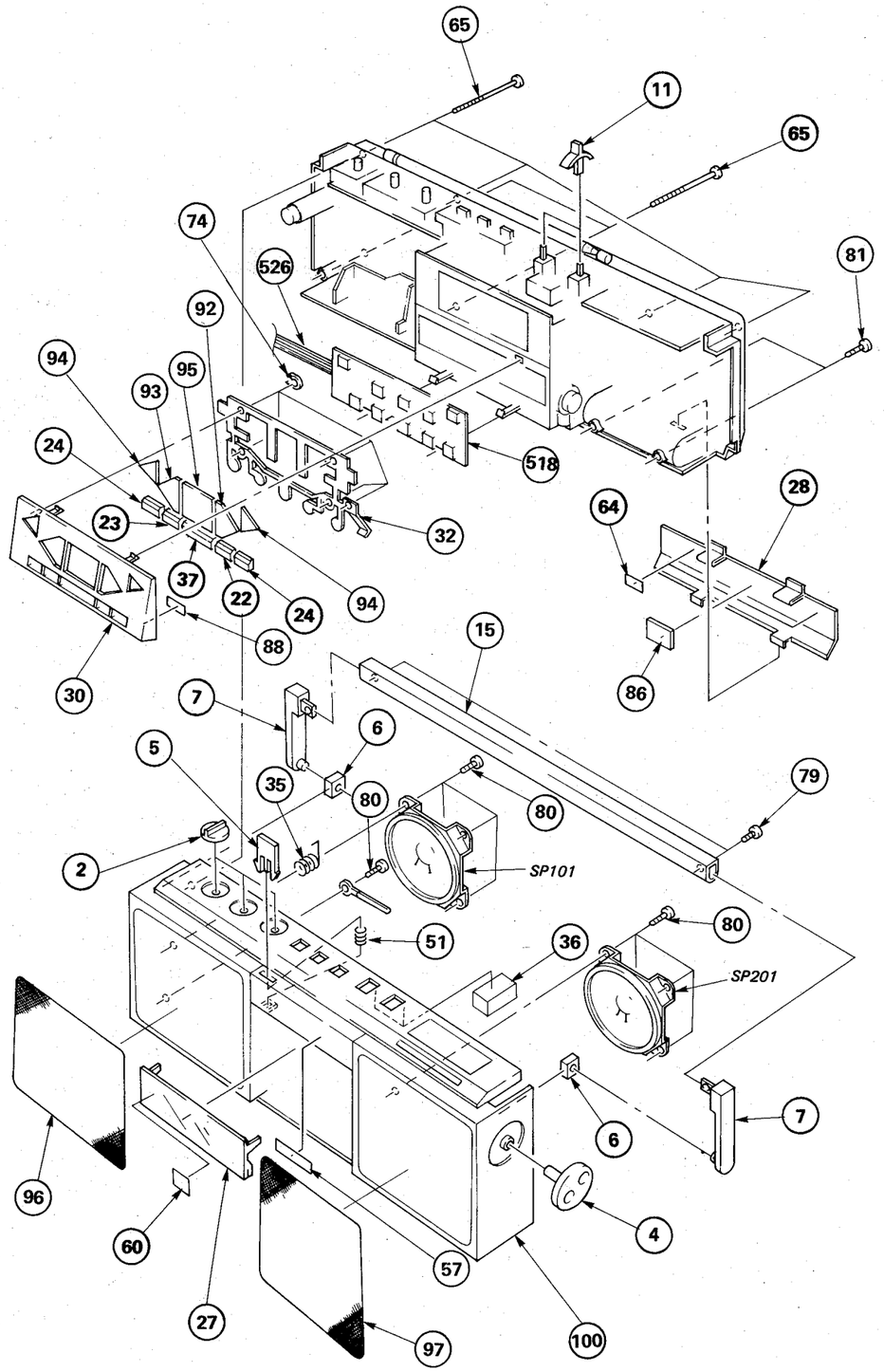



**2SC1173**



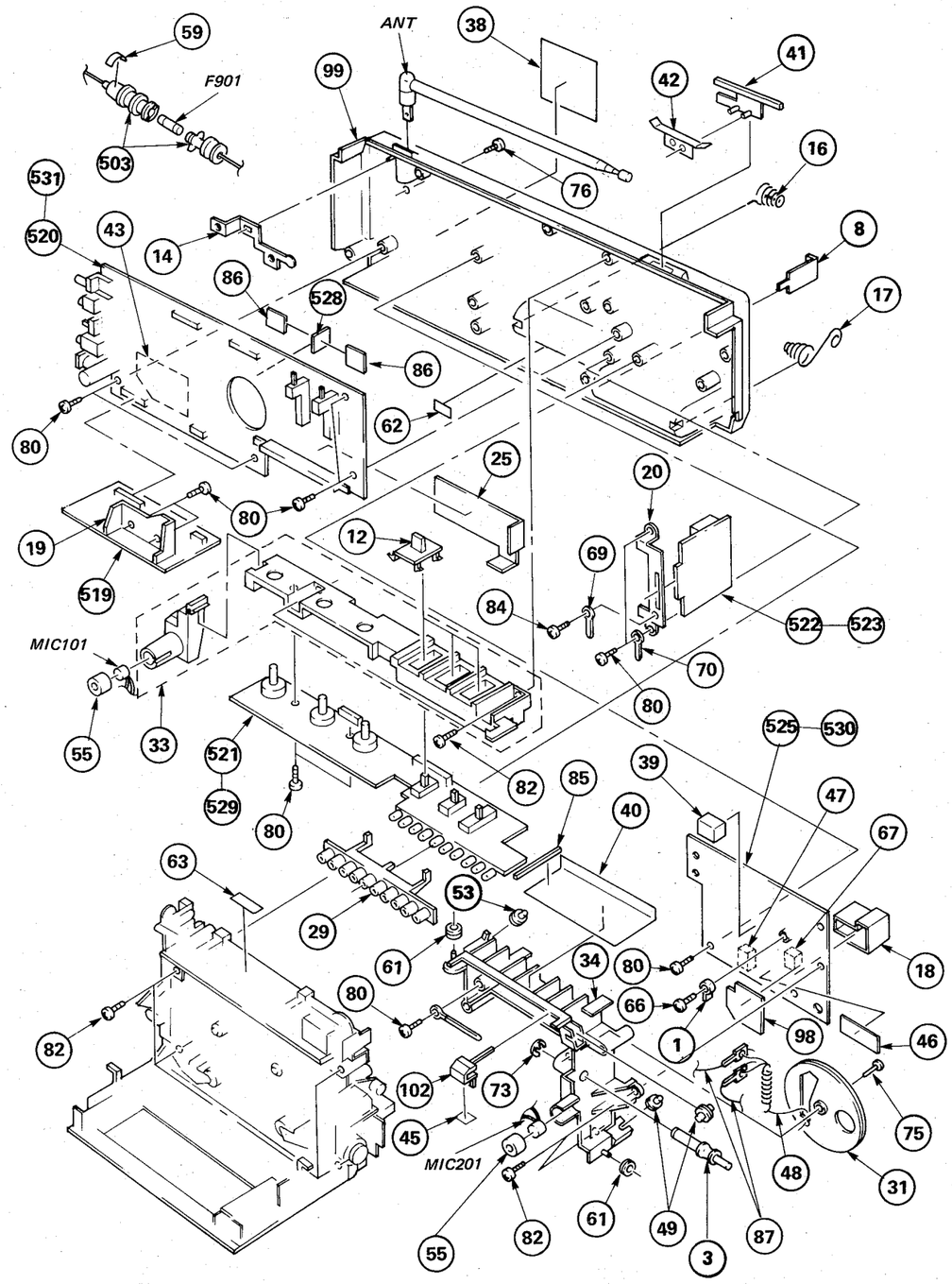
SECTION 5
EXPLODED VIEWS AND PARTS LIST

(1)

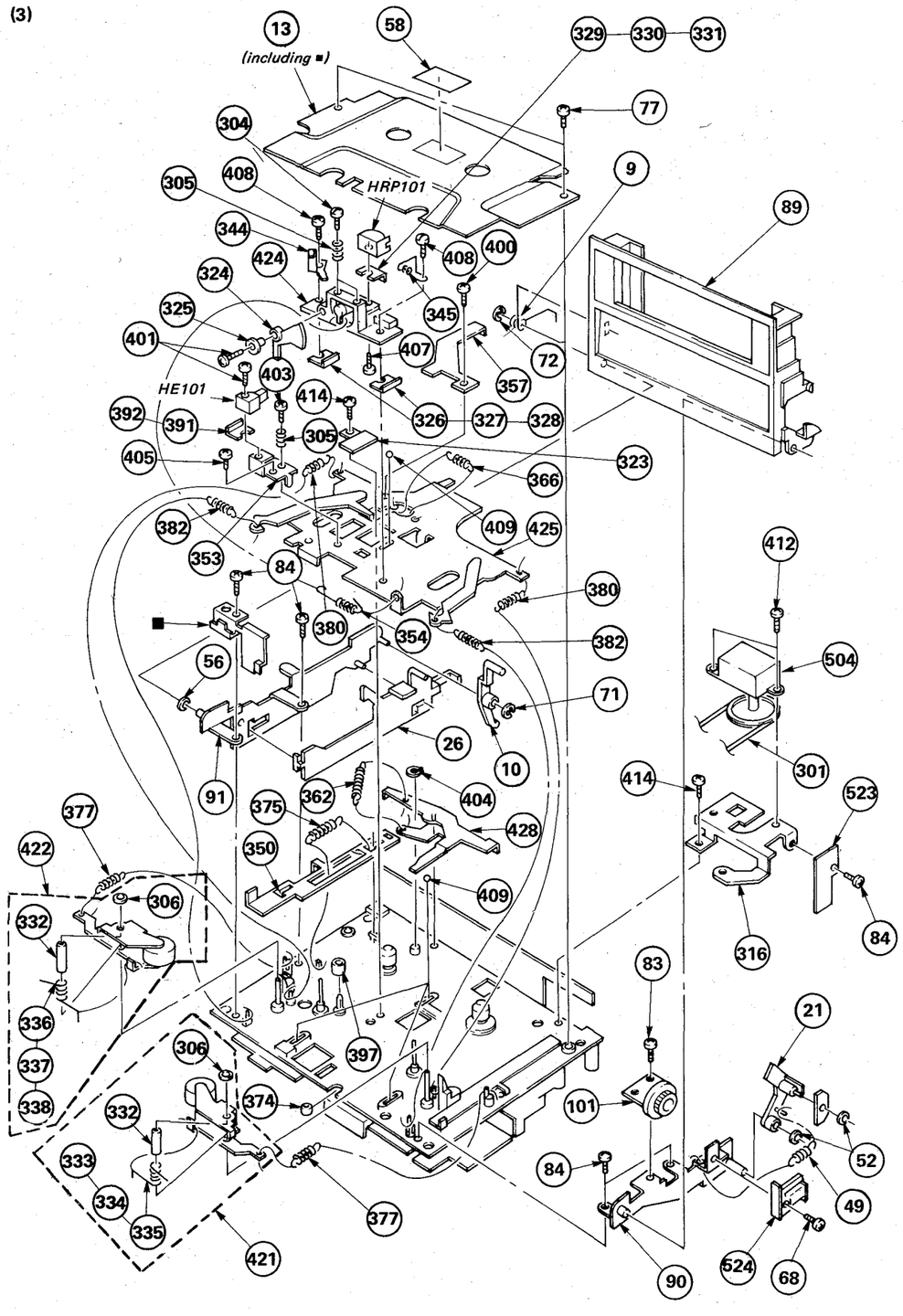





(2)



(3)


13
(including ■)
58
329
330
331
77
9
89
304
408
HRP101
305
344
424
408
400
324
325
401
403
HE101
414
345
407
72
357
326
327
328
392
391
305
405
366
323
382
353
84
409
425
412
380
380
354
382
504
56
71
26
10
301
91
375
362
404
428
414
523
422
377
350
409
306
84
332
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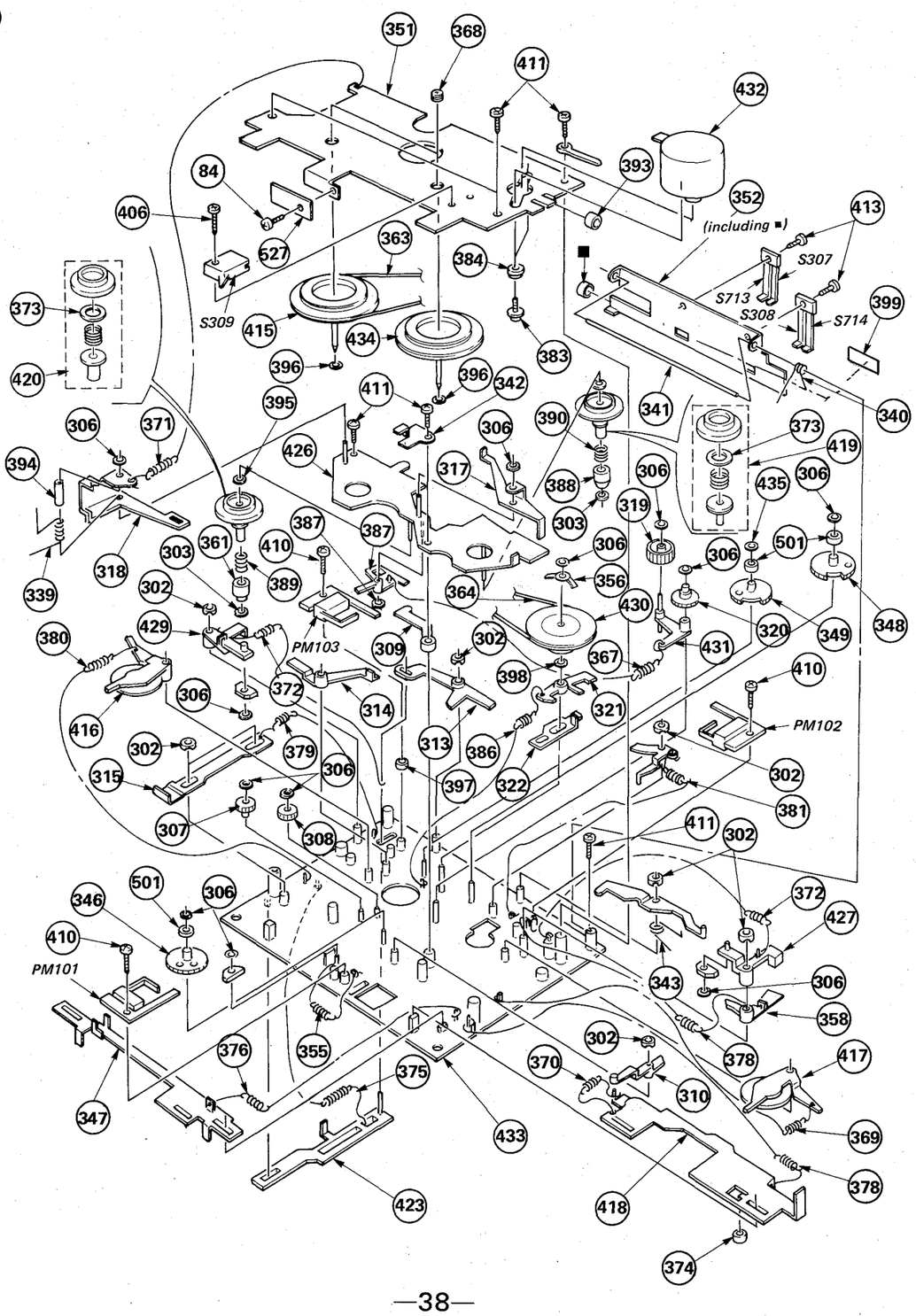
335
377
49
421
90
524
68



(4)


351
368
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406
352
(including ■)
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527
363
384
S307
S713
S308
S714
399
373
S309
415
434
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420
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318
303
389
364
356
430
306
339
302
429
PM103
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302
320
349
348
380
372
367
431
398
410
416
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PM102
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313
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322
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411
302
346
501
306
372
427
410
343
306
PM101
358
376
355
302
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417
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433
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423
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378
374

GENERAL SECTION

| No. | Part No. | Description |
|---|---|---|
| 1 | 3-305-625-00 | CAP, TUNING CAPACITOR |
| 2 | 3-308-309-00 | KNOB, CONTROL |
| 3 | 3-308-311-00 | SHAFT, TUNING |
| 4 | 3-308-312-21 | KNOB, TUNING |
| 5 | 3-308-323-00 | BUTTON, EJECT |
| 6 ♦ | 3-308-324-00 | BEARING, HANDLE |
| 7 | 3-308-337-00 | PLATE, SIDE, HANDLE |
| 8 | 3-308-828-00 | TERMINAL BOARD, PLUS |
| 9 | 3-314-101-00 | SPRING |
| 10 | 3-314-106-00 | LEVER, CONVERSION |
| 11 | 3-314-109-00 | KNOB, LEVER |
| 12 | 3-314-110-00 | KNOB, SLIDE |
| 13 | 3-314-114-00 | COVER, MD |
| 14 | 3-314-115-00 | TERMINAL BOARD, ANTENNA |
| 15 | 3-314-117-00 | HANDLE |
| 16 | 3-314-119-00 | SPRING (A) |
| 17 | 3-314-120-00 | SPRING (B) |
| 18 ♦ | 3-314-121-00 | PLATE, SHIELD, TU |
| 19 ♦ | 3-314-123-00 | HEAT SINK |
| 20 ♦ | 3-314-125-00 | BRACKET (B), JACK |
| 21 | 3-314-126-00 | LEVER, PROTECTION |
| 22 | 3-314-136-01 | BUTTON, AR (REC) |
| 23 | 3-314-136-11 | BUTTON, AR (AMS) |
| 24 | 3-314-136-21 | BUTTON, AR (REC MUTE, AUTOPLAY) |
| 25 ♦ | 3-314-138-00 | PLATE (T), SHIELD |
| 26 | 3-314-142-00 | LEVER, EJECT |
| 27 | 3-314-143-11 | WINDOW, CASSETTE |
| 28 | 3-314-145-00 | LID, BATTERY CASE |
| 29 ♦ | 3-314-146-00 | COVER, LED |
| 30 | 3-314-147-00 | CASE, BUTTON |
| 31 | 3-314-148-00 | DRUM, DIAL |
| 32 | 3-314-149-00 | SPRING |
| 33 | 3-314-155-00 | CHASSIS (LEFT) |
| 34 | 3-314-158-00 | CHASSIS (RIGHT) |
| 35 | 3-314-161-00 | SPRING |
| 36 | 3-314-165-00 | CUSHION (A) |
| 37 | 3-314-174-00 | BUTTON, PAUSE |
| 38 | 3-314-177-00 | (AEP)....LABEL, MODEL NUMBER (AEP) |
| 38 | 3-314-178-00 | (UK,E)...LABEL, MODEL NUMBER (UK) |
| 39 | 3-314-184-00 | CUSHION (H) |
| 40 | 3-314-185-00 | SCALE, DIAL |
| 41 ♦ | 3-314-189-00 | KNOB, SLIDE |
| 42 ♦ | 3-314-190-00 | SPRING |
| 43 ♦ | 3-314-191-00 | PLATE (SC), SHIELD |
| 44 | ..... | |

GENERAL SECTION

| No. | Part No. | Description |
|---|---|---|
| 45 ♦ | 3-314-594-00 | SHEET (E) |
| 46 ♦ | 3-315-801-00 | PLATE (S), SHIELD |
| 47 ♦ | 3-315-802-00 | PLATE (U), SHIELD |
| 48 | 3-430-219-00 | SPRING, TENSION |
| 49 | 3-446-154-XX | SPRING, TENSION |
| 50 | ..... | |
| 51 | 3-531-738-00 | SPRING, COMPRESION |
| 52 | 3-558-708-01 | WASHER, STOPPER |
| 53 | 3-564-506-00 | PULLEY (A) |
| 54 | ..... | |
| 55 | 3-572-119-00 | CUSHION, MICROPHONE |
| 56 | 3-701-441-11 | WASHER |
| 57 | 3-701-690-00 | (UK)....LABEL (MADE IN JAPAN) |
| 58 | 3-701-769-00 | PLATE, ORNAMENTAL |
| 59 ♦ | 3-701-948-11 | (UK)...LABEL, FUSE |
| 60 | 3-703-707-01 | STICKER, SONY SYNBOL (21) |
| 61 | 3-817-114-00 | PULLEY P8 |
| 62 | 3-831-441-XX | CUSHION, SPEAKER |
| 63 | 3-831-441-XX | SPACER |
| 64 | 3-831-441-XX | CUSHION |
| 65 | 3-846-072-21 | SCREW, TAPPING, +P 3X48 |
| 66 | 3-880-990-00 | SCREW (1.7X3), FLAT, (+) SPECIAL |
| 67 ♦ | 3-887-524-00 | PLATE, SHIELD |
| 68 | 7-621-772-38 | SCREW +PTT 2X6 (S) |
| 69 | 7-623-507-01 | LUG, 2.6 |
| 70 | 7-623-508-01 | LUG, 3 |
| 71 | 7-624-105-04 | STOP RING 2.3, TYPE -E |
| 72 | 7-624-106-04 | STOP RING 3.0, TYPE -E |
| 73 | 7-624-109-04 | STOP RING 5.0, TYPE -E |
| 74 | 7-624-193-07 | STOP RING 2, GRIP |
| 75 | 7-625-712-60 | RIVET 2X6 |
| 76 | 7-682-547-04 | SCREW +B 3X6 |
| 77 | 7-685-105-14 | TAPPING +P 2X8 NON-SLIT |
| 78 | ..... | |
| 79 | 7-685-346-14 | SCREW +RKTP 3X8 TYPE2 SLIT |
| 80 | 7-685-647-14 | SCREW +BVTP 3X10 TYPE2 N-S |
| 81 | 7-685-648-14 | SCREW +BVTP 3X12 TYPE2 N-S |
| 82 | 7-685-649-14 | SCREW +BVTP 3X14 TYPE2 N-S |
| 83 | 7-685-751-04 | SCREW +PTT 3X6 (S) |
| 84 | 7-685-791-04 | SCREW +PTT 2.6X5 (S) |
| 85 | 9-911-815-01 | CUSHION |
| 86 | 9-911-815-02 | CUSHION, BATTERY LID |
| 87 | 9-911-825-42 | STRING, 0.5MM WHITE |
| 88 | 9-911-839-XX | CUSHION (Z) |
| 89 | A-3247-080-A | HOLDER ASSY, CASSETTE |

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CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

## GENERAL SECTION

| No. | Part No. | Description |
|---|---|---|
| 90 | X-3314-102-0 | BRACKET ASSY, SE |
| 91 | X-3314-103-0 | GUIDE ASSY, EJECT |
| 92 | X-3314-105-0 | BUTTON ASSY, FWD |
| 93 | X-3314-106-0 | BUTTON ASSY, REV |
| 94 | X-3314-107-0 | BUTTON ASSY, FR |
| 95 | X-3314-108-0 | BUTTON ASSY, STOP |
| 96 | X-3314-111-1 | SP NET (L) |
| 97 | X-3314-113-1 | SP NET (R) |
| 98 ♦ | X-3314-119-0 | PLATE (B) ASSY, SHIELD, TU |
| 99 | X-3314-125-1 | CABI REAR ASSY |
| 100 | X-3314-126-1 | CABE FRONT ASSY |
| 101 | X-3577-304-0 | SE ASSY |
| 102 | X-3314-124-0 | SISIN |

## ACCESSORY & PACKING MATERIAL

| Part No. | Description |
|---|---|
| 1-463-364-11 | (E1).....ADAPTOR, AC |
| 1-463-364-21 | (E2).....ADAPTOR, AC |
| 1-463-431-00 | (UK).....ADAPTOR, AC (AC-230A) |
| 1-463-432-00 | (AEP)....ADAPTOR, AC (AC-230A) |
| 1-506-409-00 | (E2).....ADAPTOR, CONVERSION |
| 3-314-163-00 | CUSHION (LEFT) |
| 3-314-164-00 | CUSHION (RIGHT) |
| 3-314-169-00 | SHEET, PROTECTION, ADAPTOR |
| 3-314-170-00 | SLEEVE, ADAPTOR |
| 3-314-172-00 | STOPPER |
| 3-314-199-00 | INDIVIDUAL CARTON |
| 3-315-806-00 | (UK,E)...SLEEVE, ADAPTOR |
| 3-527-213-00 | LABEL, SERIAL NUMBER |
| 3-533-397-00 | BAG, POLYETHYLENE |
| 3-773-374-11 | MANUAL, INSTRUCTION |
| 3-773-374-41 | (AEP)....MANUAL, INSTRUCTION |
| 3-793-828-11 | QUESTIONNAIRE |
| 3-794-972-51 | (E2).....INSTRUCTION |
| 8-893-530-00 | TAPE DEMONSTRATION (CD-818) |

## MECHANISM SECTION

| No. | Part No. | Description |
|---|---|---|
| 301 | 3-305-702-00 | BELT (47.5X1) |
| 302 | 3-307-390-00 | BUSHING, LOADING SPRING |
| 303 | 3-307-394-00 | RETAINER (B), THRUST |
| 304 | 3-307-448-12 | SCREW, ADJUSTMENT, AZIMUTH |
| 305 | 3-307-460-00 | SPRING, COMPRESSION |
| 306 | 3-307-948-01 | WASHER, NYLON |
| 307 | 3-313-708-00 | GEAR, DECELERATION |
| 308 | 3-313-709-00 | GEAR, REVERSE |
| 309 | 3-313-710-00 | LEVER, FWD |
| 310 | 3-313-713-00 | LEVER, NR |
| 311 | 3-313-716-00 | LEVER, FF |
| 312 | 3-313-718-00 | LEVER, REC TRIGGER |
| 313 | 3-313-720-00 | LEVER, REW |
| 314 | 3-313-723-00 | LEVER, NR TRIGGER |
| 315 ♦ | 3-313-724-00 | SLIDER, NR TRIGGER |
| 316 ♦ | 3-313-732-00 | BRACKET, COUNTER |
| 317 | 3-313-733-00 | LEVER (A), REC |
| 318 | 3-313-734-00 | LEVER (B), REC |
| 319 | 3-313-744-00 | GEAR, FR |
| 320 | 3-313-745-00 | GEAR, REW |
| 321 | 3-313-746-00 | LEVER, AMS LOCK |
| 322 ♦ | 3-313-747-00 | SLIDER, GEAR RELEASE |
| 323 | 3-313-749-00 | SPRING, LEAF |
| 324 | 3-313-755-00 | GEAR, FAN MOLD |
| 325 | 3-313-756-00 | COLLAR (G) |
| 326 | 3-313-757-01 | SEAM (F), HEAD |
| 327 | 3-313-757-11 | SEAM (F), HEAD |
| 328 | 3-313-757-21 | SEAM (F), HEAD |
| 329 | 3-313-758-01 | SEAM (M), HEAD |
| 330 | 3-313-758-11 | SEAM (M), HEAD |
| 331 | 3-313-758-21 | SEAM (M), HEAD |
| 332 | 3-313-759-01 | COLLAR (P) |
| 333 | 3-313-762-01 | SPRING (N) |
| 334 | 3-313-762-11 | SPRING (N) |
| 335 | 3-313-762-21 | SPRING (N) |
| 336 | 3-313-763-01 | SPRING (R) |
| 337 | 3-313-763-11 | SPRING (R) |
| 338 | 3-313-763-21 | SPRING (R) |
| 339 | 3-313-783-00 | SPRING |
| 340 | 3-313-784-00 | SPRING |
| 341 ♦ | 3-313-785-00 | SHAFT, DETECTION LEVER |
| 342 ♦ | 3-313-786-00 | RETAINER, SLIDER |
| 343 | 3-313-787-00 | SPRING |
| 344 ♦ | 3-313-790-00 | CLAMP |
| 345 | 3-313-791-00 | CLAMP |

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- All resistors are in ohms.
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COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

MECHANISM SECTION

| No. | Part No. | Description |
|---|---|---|
| 346 | 3-313-792-00 | GEAR, FWD CAM |
| 347 ♦ | 3-313-794-00 | SLIDER (B), NR |
| 348 | 3-313-795-00 | GEAR, FF CAM |
| 349 | 3-313-796-00 | GEAR, REW CAM |
| 350 | 3-313-798-00 | SLIDER (R), PAUSE |
| 351 ♦ | 3-313-800-00 | RETAINER, THRUST |
| 352 ♦ | 3-313-803-00 | LEVER, DETECTION |
| 353 | 3-313-806-00 | BRACKET, E HEAD |
| 354 | 3-313-807-00 | SPRING, TENSION |
| 355 | 3-313-808-00 | SPRING, TENSION |
| 356 | 3-313-809-00 | SPRING |
| 357 ♦ | 3-313-810-00 | PLATE, RELEASE, BRAKE |
| 358 | 3-313-811-00 | BRAKE (S) |
| 359 | 3-313-812-00 | BRAKE (T) |
| 360 | ..... | |
| 361 | 3-313-814-00 | CLAW (T), REEL |
| 362 | 3-313-815-00 | SPRING, TENSION |
| 363 | 3-313-816-00 | BELT, SQUARE (71X1.3)(CAPSTAN) |
| 364 | 3-313-823-00 | BELT, SQUARE (55.6X1.3)(FR) |
| 365 | ..... | |
| 366 | 3-313-824-00 | SPRING, TENSION |
| 367 | 3-472-222-XX | SPRING, TENSION |
| 368 | 3-489-073-00 | SCREW, THRUST |
| 369 | 3-507-111-00 | SPRING, TENSION |
| 370 | 3-515-167-00 | SPRING, TENSION |
| 371 | 3-533-223-00 | SPRING, TENSION |
| 372 | 3-534-558-00 | SPRING, TENSION |
| 373 | 3-535-625-00 | WASHER, HANDLE |
| 374 | 3-885-228-00 | CUSHION (B) |
| 375 | 3-539-234-00 | SPRING, TENSION |
| 376 | 3-313-828-00 | SPRING, TENSION |
| 377 | 3-542-475-00 | SPRING, TENSION |
| 378 | 3-542-481-00 | SPRING, TENSION |
| 379 | 3-545-542-00 | SPRING, TENSION |
| 380 | 3-545-588-00 | SPRING, TENSION |
| 381 | 3-547-668-00 | SPRING, TENSION |
| 382 | 3-557-579-00 | SPRING, TENSION |
| 383 | 3-570-027-00 | SCREW, MOTOR |
| 384 | 3-570-118-00 | CUSHION, MOTOR |
| 385 | ..... | |
| 386 | 3-570-552-00 | SPRING, TENSION |
| 387 | 3-570-615-00 | POLY-WASHER (DIA.1.2) |
| 388 | 3-571-844-00 | CRAW, REEL |
| 389 | 3-571-850-00 | SPRING, COMPRESSION |
| 390 | 3-571-850-11 | SPRING, COMPRESSION |

MECHANISM SECTION

| No. | Part No. | Description |
|---|---|---|
| 391 | 3-573-466-01 | SPACER, HEAD |
| 392 | 3-573-466-11 | SPACER, HEAD |
| 393 | 3-655-122-00 | TIRE, S BRAKE |
| 394 | 3-657-841-81 | SPACER (2X10) |
| 395 | 3-701-437-01 | WASHER |
| 396 | 3-701-438-11 | WASHER, 2.5 |
| 397 | 3-652-612-21 | CUSHION (B) |
| 398 | 3-701-437-11 | WASHER |
| 399 | 3-831-441-XX | FELT |
| 400 | 7-621-255-15 | SCREW +P 2X3 |
| 401 | 7-621-255-55 | SCREW +P 2X8 |
| 402 | ..... | |
| 403 | 7-621-772-20 | SCREW +B 2X5 |
| 404 | 7-624-193-08 | STOP RING 3, GRIP |
| 405 | 7-627-553-17 | SCREW, PRECISION +P 2X2 |
| 406 | 7-627-553-88 | SCREW, PRECISION +P 2X7 |
| 407 | 7-627-554-58 | SCREW +P 2X2.8 |
| 408 | 7-628-254-05 | SCREW +PS 2.6X5 |
| 409 | 7-671-111-11 | STEEL, BOUL 1.5MM |
| 410 | 7-685-105-14 | TPG +P 2X8, TYPE 2, NON-SLIT |
| 411 | 7-685-646-71 | SCREW +BVTP 3X8 TYPE2 IT-3 |
| 412 | 7-685-782-01 | SCREW +PTT 2X5 (S) |
| 413 | 7-685-853-01 | SCREW +BVTT 2X6 (S) |
| 414 | 7-685-860-04 | SCREW +BVTT 2.6X4 (S) |
| 415 | X-3313-703-0 | FLYWHEEL ASSY |
| 416 | X-3313-705-0 | LEVER (N) ASSY, IDLER |
| 417 | X-3313-706-0 | LEVER (R) ASSY, IDLER |
| 418 | X-3313-707-0 | SLIDER (A) ASSY, NR |
| 419 | X-3313-708-0 | TABLE ASSY, REEL, SUPPLY |
| 420 | X-3313-709-0 | TABLE ASSY, REEL, TAKE-UP |
| 421 | X-3313-710-0 | PINCH LEVER (N) SUB ASSY |
| 422 | X-3313-711-0 | PINCH LEVER (R) SUB ASSY |
| 423 | X-3313-712-0 | SLIDER (N) ASSY, PAUSE |
| 424 | X-3313-714-0 | BRACKET ASSY, HEAD |
| 425 | X-3313-715-0 | BASE SUB ASSY, HEAD |
| 426 | X-3313-716-0 | CHASSIS SUB ASSY, SUB |
| 427 | X-3313-717-0 | LEVER SUB ASSY, FF LOCK |
| 428 | X-3313-718-2 | LEVER ASSY, PAUSE |
| 429 | X-3313-719-0 | LEVER SUB ASSY, REW LOCK |
| 430 | X-3313-720-0 | PULLEY ASSY, FR |
| 431 | X-3313-722-0 | LEVER (B) ASSY, FR |
| 432 | X-3313-723-0 | MOTOR SUB ASSY |
| 433 ♦ | X-3313-724-0 | CHASSIS ASSY, MECHANICAL |
| 434 | X-3313-725-0 | FLYWHEEL (R) ASSY |
| 435 | 3-307-948-11 | WASHER, NYLON |

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CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| 501 | 1-452-202-00 | MAGNET |
| 502 | 1-508-808-00 | 14MM BASE POST |
| 503 | 1-533-102-XX | (UK)...HOLDER, FUSE |
| 504 | 1-548-564-31 | COUNTER, TAPE (SMALL TYPE) |
| 505 | ♦;1-560-471-00 | PIN, CONNECTOR 10P |
| 506 | ♦;1-560-884-00 | CONNECTOR (M) 8P |
| 507 | ♦;1-561-557-00 | CONTACT, RECEPTACLE |
| 508 | ♦;1-561-586-00 | HOUSING, CONNECTOR 5P |
| 509 | 1-561-589-00 | HOUSING, CONNECTOR 10P |
| 510 | ♦;1-561-976-00 | CONNECTOR (F) 8P |
| 511 | ♦;1-562-046-00 | CONNECTOR, F.P.C 12P |
| 512 | 1-562-171-00 | CONNECTOR (F) 9P |
| 513 | 1-562-296-00 | CONNECTOR (F) 11P |
| 514 | ♦;1-562-366-00 | HOUSING, CONNECTOR 9P |
| 515 | ♦;1-562-367-00 | HOUSING, CONNECTOR 9P |
| 516 | 1-564-050-00 | CONNECTOR (M) 9P |
| 517 | 1-564-258-00 | CONNECTOR (M) 11P |
| 518 | ♦;1-609-938-00 | PC BOARD, KEY BOARD |
| 519 | ♦;1-609-939-00 | PC BOARD, POWER |
| 520 | ♦;1-609-940-00 | PC BOARD, AUDIO |
| 521 | ♦;1-609-941-00 | PC BOARD, CONTROL |
| 522 | ♦;1-609-942-00 | PC BOARD, JACK |
| 523 | ♦;1-609-943-00 | PC BOARD, SHUT-OFF |
| 524 | ♦;1-609-944-00 | PC BOARD, PLUNGER |
| 525 | ♦;1-609-945-21 | PC BOARD, RADIO |
| 526 | 1-609-946-00 | PC BOARD, FLEXIBLE |
| 527 | ♦;1-610-149-00 | PC BOARD, TRANSLATION |
| 528 | ♦;1-610-620-00 | PC BOARD, MICRO INDUCTOR |
| 529 | ♦;A-3215-484-A | PC BOARD ASSY, CONTROL |
| 530 | ♦;A-3266-202-A | MOUNTED PCB, RADIO |
| 531 | ♦;A-3270-145-A | MOUNTED PCB, AUDIO |
| 532 | ♦;A-3279-363-A | MOUNTED PCB, JACK |
| ANT | 1-501-240-11 | ANTENNA, TELESCOPIC (SW/FM) |

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C1 | 1-162-001-00 | CERAMIC | 1PF | 20% | 50V |
| C2 | 1-102-959-00 | CERAMIC | 22PF | 5% | 50V |
| C3 | 1-162-110-00 | CERAMIC | 0.001MF | 10% | 50V |
| C4 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C5 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C7 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C8 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C9 | 1-162-102-00 | CERAMIC | 220PF | 10% | 50V |
| C10 | 1-123-317-00 | ELECT | 22MF | 20% | 16V |
| C11 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C12 | 1-161-494-00 | CERAMIC | 0.022MF | 30% | 25V |
| C13 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C14 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C15 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C16 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C17 | 1-123-306-00 | ELECT | 47MF | 20% | 10V |
| C18 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C19 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C20 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C21 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C25 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C26 | 1-162-013-00 | CERAMIC | 10PF | 5% | 50V |
| C27 | 1-101-972-00 | CERAMIC | 18PF | 5% | 50V |
| C28 | 1-162-011-00 | CERAMIC | 6.8PF | 10% | 50V |
| C29 | 1-162-009-00 | CERAMIC | 4.7PF | 10% | 50V |
| C30 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C31 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C32 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C33 | 1-123-306-00 | ELECT | 47MF | 20% | 10V |
| C34 | 1-101-997-00 | CERAMIC | 5PF | 0.5PF | 50V |
| C35 | 1-162-009-00 | CERAMIC | 4.7PF | 10% | 50V |
| C36 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C37 | 1-123-356-00 | ELECT | 10MF | 20% | 16V |
| C38 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C39 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C40 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C56 | 1-161-021-00 | CERAMIC | 0.047MF | 10% | 25V |
| C57 | 1-161-938-00 | CERAMIC | 0.001MF | 5% | 50V |
| C58 | 1-123-353-00 | ELECT | 2.2MF | 20% | 50V |
| C59 | 1-123-306-00 | ELECT | 47MF | 20% | 10V |
| C60 | 1-161-494-00 | CERAMIC | 0.022MF | 30% | 25V |
| C61 | 1-123-380-00 | ELECT | 1MF | 20% | 50V |
| C62 | 1-123-380-00 | ELECT | 1MF | 20% | 50V |
| C63 | 1-123-353-00 | ELECT | 2.2MF | 20% | 50V |
| C64 | 1-123-380-00 | ELECT | 1MF | 20% | 50V |
| C65 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C66 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C67 | 1-123-340-00 | ELECT | 4.7MF | 20% | 35V |
| C68 | 1-123-340-00 | ELECT | 4.7MF | 20% | 35V |
| C71 | 1-162-013-00 | CERAMIC | 10PF | 5% | 50V |
| C72 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C73 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C74 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C75 | 1-161-943-00 | CERAMIC | 220PF | 2% | 50V |
| C76 | 1-161-943-00 | CERAMIC | 220PF | 2% | 50V |
| C77 | 1-102-887-00 | CERAMIC | 47PF | 5% | 50V |
| C78 | 1-161-960-00 | CERAMIC | 100PF | 2% | 50V |

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- MMH : mH, UH : μH

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In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C79 | 1-161-942-00 | CERAMIC | 100PF | 2% | 50V |
| C80 | 1-161-942-00 | CERAMIC | 100PF | 2% | 50V |
| C81 | 1-102-803-00 | CERAMIC | 27PF | 5% | 50V |
| C82 | 1-102-735-00 | CERAMIC | 2.2PF | 10% | 50V |
| C83 | 1-162-037-00 | CERAMIC | 100PF | 5% | 50V |
| C84 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C85 | 1-162-113-00 | CERAMIC | 0.01MF | 30% | 16V |
| C86 | 1-102-937-00 | CERAMIC | 4PF | 0.25PF | 50V |
| C101 | 1-123-607-00 | ELECT | 0.1MF | 20% | 50V |
| C102 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C103 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C104 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C105 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C106 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C107 | 1-123-340-00 | ELECT | 4.7MF | 20% | 35V |
| C108 | 1-162-110-00 | CERAMIC | 0.001MF | 10% | 50V |
| C109 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C110 | 1-108-591-00 | MYLAR | 0.033MF | 5% | 50V |
| C111 | 1-161-188-00 | CERAMIC | 0.018MF | 5% | 25V |
| C112 | 1-123-354-00 | ELECT | 3.3MF | 20% | 50V |
| C113 | 1-123-351-00 | ELECT | 0.47MF | 20% | 50V |
| C114 | 1-102-113-00 | CERAMIC | 390PF | 10% | 50V |
| C115 | 1-102-958-00 | CERAMIC | 20PF | 5% | 50V |
| C116 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C117 | 1-123-612-00 | ELECT | 2.2MF | 20% | 50V |
| C118 | 1-161-005-00 | CERAMIC | 0.0022MF | 10% | 25V |
| C119 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |
| C120 | 1-161-188-00 | CERAMIC | 0.018MF | 5% | 25V |
| C121 | 1-127-471-00 | ELECT(SOLID) | 0.68MF | 5% | 16V |
| C122 | 1-127-468-00 | ELECT(SOLID) | 0.22MF | 5% | 16V |
| C123 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C124 | 1-161-181-00 | CERAMIC | 0.0047MF | 5% | 25V |
| C125 | 1-108-591-00 | MYLAR | 0.033MF | 5% | 50V |
| C126 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C127 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C128 | 1-101-367-00 | CERAMIC | 160PF | 5% | 50V |
| C129 | 1-161-005-00 | CERAMIC | 0.0022MF | 10% | 25V |
| C130 | 1-107-177-00 | MICA | 220PF | 5% | 500V |
| C131 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C132 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C133 | 1-161-052-00 | CERAMIC | 0.012MF | 10% | 25V |
| C135 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |
| C136 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C137 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C138 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C139 | 1-161-011-00 | CERAMIC | 0.0068MF | 10% | 25V |
| C140 | 1-161-018-00 | CERAMIC | 0.027MF | 10% | 25V |
| C141 | 1-161-018-00 | CERAMIC | 0.027MF | 10% | 25V |
| C142 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C143 | 1-123-351-00 | ELECT | 0.47MF | 20% | 50V |
| C144 | 1-162-110-00 | CERAMIC | 0.001MF | 10% | 50V |
| C145 | 1-123-305-00 | ELECT | 33MF | 20% | 10V |
| C146 | 1-123-307-00 | ELECT | 100MF | 20% | 10V |
| C147 | 1-123-311-00 | ELECT | 1000MF | 20% | 10V |
| C148 | 1-130-499-00 | MYLAR | 0.22MF | 5% | 50V |
| C149 | 1-162-037-00 | CERAMIC | 100PF | 5% | 50V |
| C150 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C151 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C152 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C153 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C201 | 1-123-607-00 | ELECT | 0.1MF | 20% | 50V |
| C202 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C203 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C204 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C205 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C206 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C207 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C208 | 1-162-110-00 | CERAMIC | 0.001MF | 10% | 50V |
| C209 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C210 | 1-108-591-00 | MYLAR | 0.033MF | 5% | 50V |
| C211 | 1-161-188-00 | CERAMIC | 0.018MF | 5% | 25V |
| C212 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C213 | 1-123-351-00 | ELECT | 0.47MF | 20% | 50V |
| C214 | 1-102-113-00 | CERAMIC | 390PF | 10% | 50V |
| C215 | 1-102-958-00 | CERAMIC | 20PF | 5% | 50V |
| C216 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C217 | 1-123-353-00 | ELECT | 2.2MF | 20% | 50V |
| C218 | 1-161-005-00 | CERAMIC | 0.0022MF | 10% | 25V |
| C219 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |
| C220 | 1-161-188-00 | CERAMIC | 0.018MF | 5% | 25V |
| C221 | 1-127-471-00 | ELECT(SOLID) | 0.68MF | 5% | 16V |
| C222 | 1-127-468-00 | ELECT(SOLID) | 0.22MF | 5% | 16V |
| C223 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C224 | 1-161-181-00 | CERAMIC | 0.0047MF | 5% | 25V |
| C225 | 1-108-591-00 | MYLAR | 0.033MF | 5% | 50V |
| C226 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C227 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C228 | 1-101-367-00 | CERAMIC | 160PF | 5% | 50V |
| C229 | 1-161-005-00 | CERAMIC | 0.0022MF | 10% | 25V |
| C230 | 1-107-177-00 | MICA | 220PF | 5% | 500V |

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ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C231 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C232 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C233 | 1-161-052-00 | CERAMIC | 0.012MF | 10% | 25V |
| C235 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |
| C236 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C237 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C238 | 1-123-611-00 | ELECT | 1MF | 20% | 50V |
| C239 | 1-161-011-00 | CERAMIC | 0.0068MF | 10% | 25V |
| C240 | 1-161-018-00 | CERAMIC | 0.027MF | 10% | 25V |
| C241 | 1-161-018-00 | CERAMIC | 0.027MF | 10% | 25V |
| C242 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C243 | 1-123-351-00 | ELECT | 0.47MF | 20% | 50V |
| C244 | 1-162-110-00 | CERAMIC | 0.001MF | 10% | 50V |
| C245 | 1-123-305-00 | ELECT | 33MF | 20% | 10V |
| C246 | 1-123-307-00 | ELECT | 100MF | 20% | 10V |
| C247 | 1-123-311-00 | ELECT | 1000MF | 20% | 10V |
| C248 | 1-130-499-00 | MYLAR | 0.22MF | 5% | 50V |
| C249 | 1-162-037-00 | CERAMIC | 100PF | 5% | 50V |
| C250 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C251 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C252 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C253 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C301 | 1-123-295-00 | ELECT | 100MF | 20% | 6.3V |
| C302 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C303 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C304 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V |
| C305 | 1-123-617-00 | ELECT | 10MF | 20% | 16V |
| C306 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C307 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C308 | 1-123-309-00 | ELECT | 330MF | 20% | 10V |
| C309 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C310 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C311 | 1-123-607-00 | ELECT | 0.1MF | 20% | 50V |
| C312 | 1-123-617-00 | ELECT | 10MF | 20% | 16V |
| C314 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C315 | 1-123-309-00 | ELECT | 330MF | 20% | 10V |
| C316 | 1-123-616-00 | ELECT | 4.7MF | 20% | 25V |
| C317 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C318 | 1-106-174-00 | MYLAR | 0.0012MF | 5% | 100V |
| C319 | 1-106-182-00 | MYLAR | 0.0027MF | 5% | 100V |
| C320 | 1-123-307-00 | ELECT | 100MF | 20% | 10V |
| C321 | 1-131-373-00 | TANTALUM | 22MF | 10% | 16V |
| C322 | 1-123-645-00 | ELECT | 33MF | 20% | 10V |
| C323 | 1-123-618-00 | ELECT | 22MF | 20% | 6.3V |
| C324 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C325 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C326 | 1-123-330-00 | ELECT | 22MF | 20% | 25V |
| C327 | 1-123-617-00 | ELECT | 10MF | 20% | 16V |
| C328 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C329 | 1-123-307-00 | ELECT | 100MF | 20% | 10V |
| C330 | 1-123-323-00 | ELECT | 470MF | 20% | 16V |
| C331 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C332 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C333 | 1-123-617-00 | ELECT | 10MF | 20% | 16V |
| C334 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C335 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C336 | 1-123-307-00 | ELECT | 100MF | 20% | 10V |
| C337 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C338 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C339 | 1-102-975-00 | CERAMIC | 100PF | 10% | 50V |
| C340 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C341 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C701 | 1-161-182-00 | CERAMIC | 0.0056MF | 5% | 25V |
| C702 | 1-127-468-00 | ELECT(SOLID) | 0.22MF | 5% | 16V |
| C703 | 1-130-480-00 | MYLAR | 0.0056MF | 5% | 50V |
| C704 | 1-161-020-00 | CERAMIC | 0.039MF | 10% | 25V |
| C705 | 1-161-182-00 | CERAMIC | 0.0056MF | 5% | 25V |
| C706 | 1-130-480-00 | MYLAR | 0.0056MF | 5% | 50V |
| C707 | 1-123-354-00 | ELECT | 3.3MF | 20% | 50V |
| C708 | 1-131-373-00 | TANTALUM | 22MF | 10% | 16V |
| C709 | 1-123-617-00 | ELECT | 10MF | 20% | 16V |
| C710 | 1-123-647-00 | ELECT | 47MF | 20% | 6.3V |
| C712 | 1-123-661-00 | ELECT | 100MF | 20% | 6.3V |
| C713 | 1-123-661-00 | ELECT | 100MF | 20% | 6.3V |
| C714 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C715 | 1-123-354-00 | ELECT | 3.3MF | 20% | 50V |
| C716 | 1-123-613-00 | ELECT | 3.3MF | 20% | 50V |
| C717 | 1-123-645-00 | ELECT | 33MF | 20% | 10V |
| C718 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C719 | 1-123-610-00 | ELECT | 0.47MF | 20% | 50V |
| C720 | 1-123-351-00 | ELECT | 0.47MF | 20% | 50V |
| C722 | 1-123-381-00 | ELECT | 2.2MF | 20% | 50V |
| C724 | 1-161-974-00 | CERAMIC | 0.1MF | 0 | 16V |
| C731 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C732 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C733 | 1-161-013-00 | CERAMIC | 0.01MF | 10% | 25V |
| C901 | 1-124-366-00 | ELECT | 3300MF | 20% | 16V |
| C902 | 1-123-308-00 | ELECT | 220MF | 20% | 10V |
| C903 | 1-123-476-00 | ELECT | 330MF | 20% | 10V |
| C904 | 1-123-310-00 | ELECT | 470MF | 20% | 10V |

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CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| CF1 | 1-527-795-71 | FILTER, CERAMIC |
| CF2 | 1-527-795-71 | FILTER, CERAMIC |
| CF3 | 1-527-982-00 | FILTER, CERAMIC |
| CN901♦ | 1-560-469-00 | PIN, CONNECTOR 6P |
| CN902♦ | 1-560-468-00 | PIN, CONNECTOR 5P |
| CN903♦ | 1-560-468-00 | PIN, CONNECTOR 5P |
| CN904♦ | 1-560-456-00 | PIN, CONNECTOR 2P |
| CN905♦ | 1-560-469-00 | PIN, CONNECTOR 6P |
| CN906♦ | 1-564-343-00 | PIN, CONNECTOR 9P |
| CP301 | 1-464-261-00 | OSCILLATOR UNIT, BIAS |
| CT1 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CT2 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CT3 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CT4 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CT5 | 1-141-227-00 | TRIMAR, CERAMIC |
| CV1 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CV2 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CV3 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CV4 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| CV5 | 1-151-430-00 | CAP, TUNING, POLYETHYLENE |
| D1 | 8-719-911-06 | DIODE 1SS106 |
| D2 | 8-719-768-71 | DIODE 1S2687S-1 |
| D3 | 8-719-911-19 | DIODE 1SS119 |
| D4 | 8-719-911-19 | DIODE 1SS119 |
| D5 | 8-719-911-19 | DIODE 1SS119 |
| D6 | 8-719-911-19 | DIODE 1SS119 |
| D11 | 8-719-911-19 | DIODE 1SS119 |
| D12 | 8-719-911-19 | DIODE 1SS119 |
| D13 | 8-719-911-19 | DIODE 1SS119 |
| D14 | 8-719-911-19 | DIODE 1SS119 |
| D301 | 8-719-911-19 | DIODE 1SS119 |
| D302 | 8-719-911-19 | DIODE 1SS119 |
| D303 | 8-719-911-19 | DIODE 1SS119 |
| D304 | 8-719-911-19 | DIODE 1SS119 |
| D305 | 8-719-911-19 | DIODE 1SS119 |
| D306 | 8-719-911-19 | DIODE 1SS119 |
| D307 | 8-719-911-19 | DIODE 1SS119 |
| D308 | 8-719-911-19 | DIODE 1SS119 |
| D309 | 8-719-911-19 | DIODE 1SS119 |
| D701 | 8-719-911-19 | DIODE 1SS119 |
| D702 | 8-719-911-19 | DIODE 1SS119 |
| D703 | 8-719-911-19 | DIODE 1SS119 |
| D704 | 8-719-911-19 | DIODE 1SS119 |
| D705 | 8-719-911-19 | DIODE 1SS119 |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| D706 | 8-719-911-19 | DIODE 1SS119 |
| D707 | 8-719-911-19 | DIODE 1SS119 |
| D708 | 8-719-911-19 | DIODE 1SS119 |
| D709 | 8-719-911-19 | DIODE 1SS119 |
| D710 | 8-719-911-19 | DIODE 1SS119 |
| D711 | 8-719-911-19 | DIODE 1SS119 |
| D712 | 8-719-911-19 | DIODE 1SS119 |
| D713 | 8-719-911-19 | DIODE 1SS119 |
| D714 | 8-719-911-19 | DIODE 1SS119 |
| D715 | 8-719-911-19 | DIODE 1SS119 |
| D716 | 8-719-911-19 | DIODE 1SS119 |
| D717 | 8-719-911-19 | DIODE 1SS119 |
| D718 | 8-719-911-19 | DIODE 1SS119 |
| D719 | 8-719-911-19 | DIODE 1SS119 |
| D720 | 8-719-911-19 | DIODE 1SS119 |
| D721 | 8-719-911-19 | DIODE 1SS119 |
| D722 | 8-719-911-19 | DIODE 1SS119 |
| D723 | 8-719-911-19 | DIODE 1SS119 |
| D724 | 8-719-911-19 | DIODE 1SS119 |
| D725 | 8-719-911-19 | DIODE 1SS119 |
| D726 | 8-719-911-19 | DIODE 1SS119 |
| D727 | 8-719-911-19 | DIODE 1SS119 |
| D728 | 8-719-906-59 | DIODE GL-5PR21 |
| D729 | 8-719-906-57 | DIODE GL-5NG24 |
| D730 | 8-719-906-57 | DIODE GL-5NG24 |
| D731 | 8-719-906-59 | DIODE GL-5PR21 |
| D732 | 8-719-906-59 | DIODE GL-5PR21 |
| D733 | 8-719-906-59 | DIODE GL-5PR21 |
| D734 | 8-719-906-59 | DIODE GL-5PR21 |
| D735 | 8-719-114-06 | DIODE SY406D |
| D736 | 8-719-906-59 | DIODE GL-5PR21 |
| D737 | 8-719-800-08 | DIODE TLR213 |
| D738 | 8-719-911-19 | DIODE 1SS119 |
| D739 | 8-719-911-19 | DIODE 1SS119 |
| D740 | 8-719-911-19 | DIODE 1SS119 |
| D742 | 8-719-911-19 | DIODE 1SS119 |
| D743 | 8-719-911-19 | DIODE 1SS119 |
| D744 | 8-719-911-19 | DIODE 1SS119 |
| D745 | 8-719-101-60 | DIODE RD6.2EL1 |
| D747 | 8-719-911-19 | DIODE 1SS119 |
| D748 | 8-719-911-19 | DIODE 1SS119 |
| D749 | 8-719-911-19 | DIODE 1SS119 |
| D750 | 8-719-911-19 | DIODE 1SS119 |
| D751 | 8-719-906-56 | DIODE GL-5HY21 |
| D754 | 8-719-911-19 | DIODE 1SS119 |

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CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| D756 | 8-719-911-19 | DIODE 1SS119 |
| D759 | 8-719-906-59 | DIODE GL-5PR21 |
| D765 | 8-719-911-19 | DIODE 1SS119 |
| D901 | 8-719-100-43 | DIODE RD7.5EB1 |
| F901 | 1-532-279-00 | (UK)...FUSE, TIME |
| FL1 | 1-235-222-00 | FILTER, BANDPASS |
| FL2 | 1-235-221-00 | FILTER, LOW PASS |
| HE101 | 8-825-559-10 | HEAD, ERAZE (EF-250-36) |
| HRP101 | 8-825-507-40 | HEAD, REC/PB (PP227-3602B) |
| IC1 | 8-759-900-65 | IC KB4419C |
| IC2 | 8-759-800-54 | IC LA3365 |
| IC301 | 8-759-800-36 | IC LA3160 |
| IC302 | 8-759-300-32 | IC HA12047 |
| IC303 | 8-759-907-13 | IC TK10562F |
| IC304 | 8-759-800-56 | IC LA4507 |
| IC701 | 8-759-201-76 | IC TC9310N-027 |
| IC702 | 8-759-201-77 | IC TC9310N-028 |
| J301 | 1-507-834-21 | JACK |
| J302 | 1-507-833-21 | JACK |
| J303 | 1-507-643-00 | JACK |
| J304 | 1-507-833-21 | JACK |
| J305 | 1-507-806-00 | JACK |
| J306 | 1-507-459-00 | JACK |
| L1 | 1-425-991-00 | COIL |
| L2 | 1-459-393-00 | COIL (WITH CORE) |
| L3 | 1-402-023-00 | ANTENNA, FERRITE-ROD (MW) |
| L4 | 1-408-674-00 | MICRO INDUCTOR 0.68UH |
| L5 | 1-408-579-00 | MICRO INDUCTOR 220UH |
| L6 | 1-405-984-00 | COIL, OSC (SW3) |
| L7 | 1-401-965-00 | COIL, ANTENNA (SW5) |
| L8 | 1-402-025-00 | COIL (ANT) |
| L9 | 1-401-941-00 | COIL, ANTENNA (SW4) |
| L10 | 1-402-047-00 | COIL, ANT |
| L11 | 1-406-009-00 | COIL, OSC (SW5) |
| L12 | 1-405-986-00 | COIL, OSC (SW5) |
| L13 | 1-405-985-00 | COIL, OSC (SW4) |
| L14 | 1-406-008-00 | COIL, OSC (SW2) |
| L15 | 1-405-983-00 | COIL, OSC (SW2) |
| L101 | 1-408-922-00 | MICRO INDUCTOR 6.8MMH |
| L102 | 1-408-928-00 | MICRO INDUCTOR 22MMH |
| L201 | 1-408-922-00 | MICRO INDUCTOR 6.8MMH |
| L202 | 1-408-928-00 | MICRO INDUCTOR 22MMH |
| L701 | 1-408-579-00 | MICRO INDUCTOR 220UH |
| L702 | 1-408-579-00 | MICRO INDUCTOR 220UH |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| PM1 | 1-454-353-00 | SOLENOID, PLUNGER |
| PM101 | 1-454-351-00 | SOLENOID, PLUNGER |
| PM102 | 1-454-351-00 | SOLENOID, PLUNGER |
| PM103 | 1-454-352-00 | SOLENOID, PLUNGER |
| Q1 | 8-729-883-92 | TRANSISTOR 2SC2839 |
| Q2 | 8-729-178-62 | TRANSISTOR 2SC2786-L |
| Q3 | 8-729-883-91 | TRANSISTOR 2SC2839-D |
| Q4 | 8-729-103-30 | TRANSISTOR 2SC2786-1-LF |
| Q5 | 8-729-200-66 | TRANSISTOR 2SK192A |
| Q6 | 8-729-672-43 | TRANSISTOR 2SC2724 |
| Q7 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q8 | 8-729-672-43 | TRANSISTOR 2SC2724-D |
| Q9 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q11 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q12 | 8-729-119-32 | TRANSISTOR 2SK193 |
| Q13 | 8-729-883-91 | TRANSISTOR 2SC2839-D |
| Q14 | 8-729-672-43 | TRANSISTOR 2SC2724-D |
| Q15 | 8-729-672-43 | TRANSISTOR 2SC2724 |
| Q101 | 8-729-205-84 | TRANSISTOR 2SC2458L-BL |
| Q102 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q103 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q104 | 8-729-205-84 | TRANSISTOR 2SC2458L-BL |
| Q105 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q106 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q107 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q108 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q109 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q201 | 8-729-205-84 | TRANSISTOR 2SC2458L-BL |
| Q202 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q203 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q204 | 8-729-205-84 | TRANSISTOR 2SC2458L-BL |
| Q205 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q206 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q207 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q208 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q209 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q301 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q302 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q303 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q304 | 8-729-100-13 | TRANSISTOR 2SC2001 |
| Q305 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q306 | 8-729-204-83 | TRANSISTOR 2SA1048-GR |
| Q701 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q702 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q703 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q704 | 8-729-245-83 | TRANSISTOR 2SC2458 |

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- MMH : mH, UH : μH

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In each case, U : μ, for example:
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UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| Q705 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q706 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q707 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q708 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q709 | 8-729-378-84 | TRANSISTOR 2SD788 |
| Q710 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q711 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q713 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q714 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q716 | 8-729-101-13 | TRANSISTOR PH103 |
| Q717 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q718 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q719 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q720 | 8-729-245-83 | TRANSISTOR 2SC2458 |
| Q901 | 8-729-113-32 | TRANSISTOR 2SB733 |
| Q902 | 8-729-100-13 | TRANSISTOR 2SC2001 |
| Q903 | 8-729-217-33 | (UK).....TRANSISTOR 2SC1173 |
| Q903 | 8-729-282-42 | (AEP,E)...TRANSISTOR 2SC2824 |
| R1 | 1-247-895-00 | CARBON 470K 5% 1/6W |
| R2 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R3 | 1-247-789-00 | CARBON 18 5% 1/6W |
| R4 | 1-247-889-00 | CARBON 270K 5% 1/6W |
| R5 | 1-247-827-00 | CARBON 680 5% 1/6W |
| R6 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R7 | 1-247-783-00 | CARBON 10 5% 1/6W |
| R8 | 1-247-877-00 | CARBON 82K 5% 1/6W |
| R9 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R10 | 1-247-839-00 | CARBON 2.2K 5% 1/6W |
| R11 | 1-247-783-00 | CARBON 10 5% 1/6W |
| R12 | 1-247-827-00 | CARBON 680 5% 1/6W |
| R13 | 1-247-871-00 | CARBON 47K 5% 1/6W |
| R14 | 1-247-831-00 | CARBON 1K 5% 1/6W |
| R15 | 1-247-849-00 | CARBON 5.6K 5% 1/6W |
| R16 | 1-247-819-00 | CARBON 330 5% 1/6W |
| R17 | 1-247-823-00 | CARBON 470 5% 1/6W |
| R18 | 1-247-857-00 | CARBON 12K 5% 1/6W |
| R19 | 1-247-853-00 | CARBON 8.2K 5% 1/6W |
| R20 | 1-247-799-00 | CARBON 47 5% 1/6W |
| R25 | 1-247-839-00 | CARBON 2.2K 5% 1/6W |
| R26 | 1-247-877-00 | CARBON 82K 5% 1/6W |
| R27 | 1-247-807-00 | CARBON 100 5% 1/6W |
| R28 | 1-247-879-00 | CARBON 100K 5% 1/6W |
| R29 | 1-247-889-00 | CARBON 270K 5% 1/6W |
| R30 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R31 | 1-247-825-00 | CARBON 560 5% 1/6W |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| R33 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R35 | 1-247-831-00 | CARBON 1K 5% 1/6W |
| R36 | 1-247-885-00 | CARBON 180K 5% 1/6W |
| R37 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R38 | 1-247-839-00 | CARBON 2.2K 5% 1/6W |
| R38 | 1-247-845-00 | CARBON 3.9K 5% 1/6W |
| R39 | 1-247-849-00 | CARBON 5.6K 5% 1/6W |
| R40 | 1-247-847-00 | CARBON 4.7K 5% 1/6W |
| R41 | 1-247-879-00 | CARBON 100K 5% 1/6W |
| R42 | 1-247-899-00 | CARBON 680K 5% 1/6W |
| R43 | 1-247-819-00 | CARBON 330 5% 1/6W |
| R44 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R45 | 1-247-879-00 | CARBON 100K 5% 1/6W |
| R49 | 1-247-791-00 | CARBON 22 5% 1/6W |
| R56 | 1-247-839-00 | CARBON 2.2K 5% 1/6W |
| R57 | 1-247-853-00 | CARBON 8.2K 5% 1/6W |
| R58 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R59 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R60 | 1-247-821-00 | CARBON 390 5% 1/6W |
| R61 | 1-247-831-00 | CARBON 1K 5% 1/6W |
| R62 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R63 | 1-247-841-00 | CARBON 2.7K 5% 1/6W |
| R64 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R65 | 1-247-841-00 | CARBON 2.7K 5% 1/6W |
| R66 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R67 | 1-247-815-00 | CARBON 220 5% 1/6W |
| R70 | 1-247-789-00 | CARBON 18 5% 1/6W |
| R71 | 1-247-799-00 | CARBON 47 5% 1/6W |
| R72 | 1-247-831-00 | CARBON 1K 5% 1/6W |
| R73 | 1-247-835-00 | CARBON 1.5K 5% 1/6W |
| R74 | 1-247-825-00 | CARBON 560 5% 1/6W |
| R75 | 1-247-885-00 | CARBON 180K 5% 1/6W |
| R76 | 1-247-807-00 | CARBON 100 5% 1/6W |
| R78 | 1-247-879-00 | CARBON 100K 5% 1/6W |
| R79 | 1-247-827-00 | CARBON 680 5% 1/6W |
| R80 | 1-247-807-00 | CARBON 100 5% 1/6W |
| R81 | 1-247-901-00 | CARBON 820K 5% 1/6W |
| R82 | 1-247-843-00 | CARBON 3.3K 5% 1/6W |
| R101 | 1-247-807-00 | CARBON 100 5% 1/6W |
| R102 | 1-247-838-00 | CARBON 2K 5% 1/6W |
| R104 | 1-247-830-00 | CARBON 910 5% 1/6W |
| R106 | 1-247-847-00 | CARBON 4.7K 5% 1/6W |
| R107 | 1-247-809-00 | CARBON 120 5% 1/6W |
| R108 | 1-247-855-00 | CARBON 10K 5% 1/6W |
| R109 | 1-247-871-00 | CARBON 47K 5% 1/6W |

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MF:μF, PF:μμF.

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- All resistors are in ohms.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R110 | 1-247-836-00 | CARBON | 1.6K | 5% | 1/6W |
| R111 | 1-247-803-00 | CARBON | 68 | 5% | 1/6W |
| R112 | 1-247-881-00 | CARBON | 120K | 5% | 1/6W |
| R113 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R114 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R115 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R116 | 1-247-830-00 | CARBON | 910 | 5% | 1/6W |
| R117 | 1-247-896-00 | CARBON | 510K | 5% | 1/6W |
| R118 | 1-247-846-00 | CARBON | 4.3K | 5% | 1/6W |
| R119 | 1-247-850-00 | CARBON | 6.2K | 5% | 1/6W |
| R120 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R121 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R122 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R123 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R124 | 1-247-858-00 | CARBON | 13K | 5% | 1/6W |
| R125 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |
| R126 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R127 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R129 | 1-247-857-00 | CARBON | 12K | 5% | 1/6W |
| R130 | 1-247-813-00 | CARBON | 180 | 5% | 1/6W |
| R131 | 1-247-840-00 | CARBON | 2.4K | 5% | 1/6W |
| R132 | 1-247-873-00 | CARBON | 56K | 5% | 1/6W |
| R133 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R134 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R135 | 1-247-893-00 | CARBON | 390K | 5% | 1/6W |
| R136 | 1-247-838-00 | CARBON | 2K | 5% | 1/6W |
| R137 | 1-247-827-00 | CARBON | 680 | 5% | 1/6W |
| R138 | 1-247-852-00 | CARBON | 7.5K | 5% | 1/6W |
| R139 | 1-247-860-00 | CARBON | 16K | 5% | 1/6W |
| R140 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R141 | 1-247-883-00 | CARBON | 150K | 5% | 1/6W |
| R142 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R143 | 1-247-822-00 | CARBON | 430 | 5% | 1/6W |
| R144 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R145 | 1-247-851-00 | CARBON | 6.8K | 5% | 1/6W |
| R146 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R147 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R148 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R149 | 1-247-810-00 | CARBON | 130 | 5% | 1/6W |
| R150 | 1-247-804-00 | CARBON | 75 | 5% | 1/6W |
| R151 | 1-247-801-00 | CARBON | 56 | 5% | 1/6W |
| R152 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R153 | 1-247-901-00 | CARBON | 820K | 5% | 1/6W |
| R201 | 1-247-807-00 | CARBON | 100 | 5% | 1/6W |
| R202 | 1-247-838-00 | CARBON | 2K | 5% | 1/6W |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R204 | 1-247-830-00 | CARBON | 910 | 5% | 1/6W |
| R206 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R207 | 1-247-809-00 | CARBON | 120 | 5% | 1/6W |
| R208 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R209 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R210 | 1-247-836-00 | CARBON | 1.6K | 5% | 1/6W |
| R211 | 1-247-803-00 | CARBON | 68 | 5% | 1/6W |
| R212 | 1-247-881-00 | CARBON | 120K | 5% | 1/6W |
| R213 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R214 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R215 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R216 | 1-247-830-00 | CARBON | 910 | 5% | 1/6W |
| R217 | 1-247-896-00 | CARBON | 510K | 5% | 1/6W |
| R218 | 1-247-846-00 | CARBON | 4.3K | 5% | 1/6W |
| R219 | 1-247-850-00 | CARBON | 6.2K | 5% | 1/6W |
| R220 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R221 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R222 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R223 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R224 | 1-247-858-00 | CARBON | 13K | 5% | 1/6W |
| R225 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |
| R226 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R227 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R229 | 1-247-857-00 | CARBON | 12K | 5% | 1/6W |
| R230 | 1-247-813-00 | CARBON | 180 | 5% | 1/6W |
| R231 | 1-247-840-00 | CARBON | 2.4K | 5% | 1/6W |
| R232 | 1-247-873-00 | CARBON | 56K | 5% | 1/6W |
| R233 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R234 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R235 | 1-247-893-00 | CARBON | 390K | 5% | 1/6W |
| R236 | 1-247-838-00 | CARBON | 2K | 5% | 1/6W |
| R237 | 1-247-827-00 | CARBON | 680 | 5% | 1/6W |
| R238 | 1-247-852-00 | CARBON | 7.5K | 5% | 1/6W |
| R239 | 1-247-860-00 | CARBON | 16K | 5% | 1/6W |
| R240 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R241 | 1-247-883-00 | CARBON | 150K | 5% | 1/6W |
| R242 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R243 | 1-247-822-00 | CARBON | 430 | 5% | 1/6W |
| R244 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R245 | 1-247-851-00 | CARBON | 6.8K | 5% | 1/6W |
| R246 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R247 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R248 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R249 | 1-247-810-00 | CARBON | 130 | 5% | 1/6W |
| R250 | 1-247-804-00 | CARBON | 75 | 5% | 1/6W |

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MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R251 | 1-247-801-00 | CARBON | 56 | 5% | 1/6W |
| R252 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R253 | 1-247-901-00 | CARBON | 820K | 5% | 1/6W |
| R301 | 1-247-826-00 | CARBON | 620 | 5% | 1/6W |
| R302 | 1-247-799-00 | CARBON | 47 | 5% | 1/6W |
| R303 | 1-247-835-00 | CARBON | 1.5K | 5% | 1/6W |
| R304 | 1-247-799-00 | CARBON | 47 | 5% | 1/6W |
| R305 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R306 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R307 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R308 | 1-247-895-00 | CARBON | 470K | 5% | 1/6W |
| R309 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R310 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R311 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R312 | 1-247-799-00 | CARBON | 47 | 5% | 1/6W |
| R313 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R314 | 1-247-815-00 | CARBON | 220 | 5% | 1/6W |
| R315 | 1-247-883-00 | CARBON | 150K | 5% | 1/6W |
| R316 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R317 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R318 | 1-246-422-00 | CARBON | 7.5 | 5% | 1/4W |
| R319 | 1-246-441-00 | CARBON | 47 | 5% | 1/4W |
| R320 | 1-246-444-00 | CARBON | 62 | 5% | 1/4W |
| R321 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R322 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R323 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R324 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R325 | 1-247-863-00 | CARBON | 22K | 5% | 1/6W |
| R326 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R327 | 1-247-863-00 | CARBON | 22K | 5% | 1/6W |
| R328 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |
| R329 | 1-247-848-00 | CARBON | 5.1K | 5% | 1/6W |
| R330 | 1-202-473-00 | SOLID | 5.6M | 5% | 1/4W |
| R331 | 1-247-871-00 | CARBON | 47K | 5% | 1/6W |
| R332 | 1-247-851-00 | CARBON | 6.8K | 5% | 1/6W |
| R333 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R334 | 1-247-817-00 | CARBON | 270 | 5% | 1/6W |
| R335 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R337 | 1-247-840-00 | CARBON | 2.4K | 5% | 1/6W |
| R338 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R339 | 1-247-835-00 | CARBON | 1.5K | 5% | 1/6W |
| R340 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R341 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R342 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R344 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R346 | 1-247-807-00 | CARBON | 100 | 5% | 1/6W |
| R347 | 1-247-816-00 | CARBON | 240 | 5% | 1/6W |
| R348 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R350 | 1-247-839-00 | CARBON | 2.2K | 5% | 1/6W |
| R701 | 1-247-862-00 | CARBON | 20K | 5% | 1/6W |
| R702 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R703 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R704 | 1-247-891-00 | CARBON | 330K | 5% | 1/6W |
| R705 | 1-247-866-00 | CARBON | 30K | 5% | 1/6W |
| R706 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R707 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R708 | 1-247-859-00 | CARBON | 15K | 5% | 1/6W |
| R709 | 1-247-819-00 | CARBON | 330 | 5% | 1/6W |
| R710 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R711 | 1-247-853-00 | CARBON | 8.2K | 5% | 1/6W |
| R712 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R713 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R714 | 1-247-847-00 | CARBON | 4.7K | 5% | 1/6W |
| R715 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R716 | 1-247-859-00 | CARBON | 15K | 5% | 1/6W |
| R717 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R719 | 1-247-866-00 | CARBON | 30K | 5% | 1/6W |
| R720 | 1-247-873-00 | CARBON | 56K | 5% | 1/6W |
| R721 | 1-247-859-00 | CARBON | 15K | 5% | 1/6W |
| R722 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R723 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R724 | 1-247-829-00 | CARBON | 820 | 5% | 1/6W |
| R725 | 1-247-829-00 | CARBON | 820 | 5% | 1/6W |
| R726 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R727 | 1-247-823-00 | CARBON | 470 | 5% | 1/6W |
| R728 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R729 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R730 | 1-247-825-00 | CARBON | 560 | 5% | 1/6W |
| R731 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R732 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R734 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R737 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R738 | 1-247-864-00 | CARBON | 24K | 5% | 1/6W |
| R739 | 1-247-891-00 | CARBON | 330K | 5% | 1/6W |
| R740 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R741 | 1-247-855-00 | CARBON | 10K | 5% | 1/6W |
| R742 | 1-247-859-00 | CARBON | 15K | 5% | 1/6W |
| R743 | 1-247-859-00 | CARBON | 15K | 5% | 1/6W |
| R744 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |
| R746 | 1-247-818-00 | CARBON | 300 | 5% | 1/6W |

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COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

ELECTRICAL PARTS

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R747 | 1-247-849-00 | CARBON | 5.6K | 5% | 1/6W |
| R748 | 1-247-873-00 | CARBON | 56K | 5% | 1/6W |
| R749 | 1-247-862-00 | CARBON | 20K | 5% | 1/6W |
| R750 | 1-247-829-00 | CARBON | 820 | 5% | 1/6W |
| R751 | 1-247-818-00 | CARBON | 300 | 5% | 1/6W |
| R752 | 1-247-818-00 | CARBON | 300 | 5% | 1/6W |
| R753 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| R759 | 1-247-879-00 | CARBON | 100K | 5% | 1/6W |
| R901 | 1-247-903-00 | CARBON | 1M | 5% | 1/6W |
| R902 | 1-247-838-00 | CARBON | 2K | 5% | 1/6W |
| R903 | 1-247-817-00 | CARBON | 270 | 5% | 1/6W |
| R904 | 1-247-831-00 | CARBON | 1K | 5% | 1/6W |
| RV1 | 1-230-066-00 | RES, ADJ, CARBON 4.7K | | | |
| RV101 | 1-228-738-00 | RES, VAR, CARBON 100K/100K (TREBLE) | | | |
| RV102 | 1-230-076-00 | RES, VAR, CARBON 100K/100K (BASS) | | | |
| RV103 | 1-230-090-00 | RES, VAR, CARBON 20K/20K (VOLUME) | | | |
| RV104 | 1-230-067-00 | RES, ADJ, CARBON 22K | | | |
| RV105 | 1-230-069-00 | RES, ADJ, CARBON 100K | | | |
| RV106 | 1-230-068-00 | RES, ADJ, CARBON 47K | | | |
| RV201 | 1-228-738-00 | RES, VAR, CARBON 100K/100K (TREBLE) | | | |
| RV202 | 1-230-076-00 | RES, VAR, CARBON 100K/100K (BASS) | | | |
| RV203 | 1-230-090-00 | RES, VAR, CARBON 20K/20K (VOLUME) | | | |
| RV204 | 1-230-067-00 | RES, ADJ, CARBON 22K | | | |
| RV205 | 1-230-069-00 | RES, ADJ, CARBON 100K | | | |
| RV206 | 1-230-068-00 | RES, ADJ, CARBON 47K | | | |
| RV301 | 1-230-077-31 | RES, VAR, CARBON 100K (BALANCE) | | | |
| S1 | 1-553-961-00 | SWITCH, SLIDE (SW) | | | |
| S301 | 1-554-480-00 | SWITCH, LEVER SLIDE (FUNCTION) | | | |
| S302 | 1-554-479-00 | SWITCH, LEVER SLIDE(BAND) | | | |
| S303 | 1-552-843-00 | SWITCH, SLIDE (REC/PB) | | | |
| S304 | 1-554-061-00 | SWITCH, SLIDE (ISS) | | | |
| S305 | 1-554-481-00 | SWITCH, SLIDE (DOLBY NR) | | | |
| S307 | 1-554-468-00 | SWITCH, LEAF (ATS IV) | | | |
| S308 | 1-554-468-00 | SWITCH, LEAF (ATS II) | | | |
| S309 | 1-554-488-00 | SWITCH, SLIDE (MD POWER) | | | |
| S701 | 1-553-235-00 | SWITCH, KEY BOARD (◀◀) | | | |
| S702 | 1-553-235-00 | SWITCH, KEY BOARD (REW) | | | |
| S703 | 1-553-235-00 | SWITCH, KEY BOARD (STOP) | | | |
| S704 | 1-553-235-00 | SWITCH, KEY BOARD (FWD) | | | |
| S705 | 1-553-235-00 | SWITCH, KEY BOARD (▶▶) | | | |
| S706 | 1-553-235-00 | SWITCH, KEY BOARD (REC) | | | |
| S707 | 1-553-235-00 | SWITCH, KEY BOARD (PAUSE) | | | |
| S708 | 1-553-235-00 | SWITCH, KEY BOARD (AUTO PLAY REPEAT) | | | |
| S709 | 1-553-235-00 | SWITCH, KEY BOARD (REC MUTE) | | | |

ELECTRICAL PARTS

| Ref.No. | Part No. | Description |
|---|---|---|
| S710 | 1-553-235-00 | SWITCH, KEY BOARD (AMS) |
| S711 | 1-554-482-00 | SWITCH, SLIDE (MODE) |
| S712 | 1-554-481-00 | SWITCH, SLIDE (BLANK SKIP) |
| S713 | 1-554-468-00 | SWITCH, LEAF (CASSETTE HALF) |
| S714 | 1-554-468-00 | SWITCH, LEAF (ERASE PROOF) |
| SP101 | 1-503-266-00 | SPEAKER |
| SP201 | 1-503-266-00 | SPEAKER |
| T1 | 1-404-457-00 | TRANSFORMER, DISCRIMINATOR |
| T2 | 1-404-100-00 | COIL, IFT |
| T3 | 1-404-455-00 | TRANSFORMER, IF |
| T4 | 1-405-655-00 | COIL, MW OSCILLATOR |

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

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Sony Corporation



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# CFS-F11S

# SERVICE MANUAL

*AEP Model*
*UK Model*
*E Model*

## SUPPLEMENT

No. 1
October, 1983

**Use in conjunction with the Service Manual previously issued.**

This is supplement (1) consisting of CFS-F11S circuit and operation description.

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**2. CIRCUIT DESCRIPTION**

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## FM/MW/SW STEREO CASSETTE-CORDER

SONY®

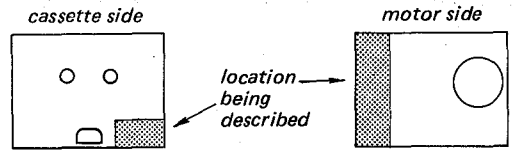
TC

# SECTION 1
# MECHANICAL OPERATION

On this model, the FWD cam gear and REW cam gear are kicked by the plunger solenoids (PM101, PM102, PM103). Mode switching is performed by engaging these gears with the grears which are constantly rotating, and rotating them.

The major mechanical parts are shown below.

On the figures for each mode operation, the diagram in the upper left illustrates the position of the mech deck and the shaded portion shows the location being described.



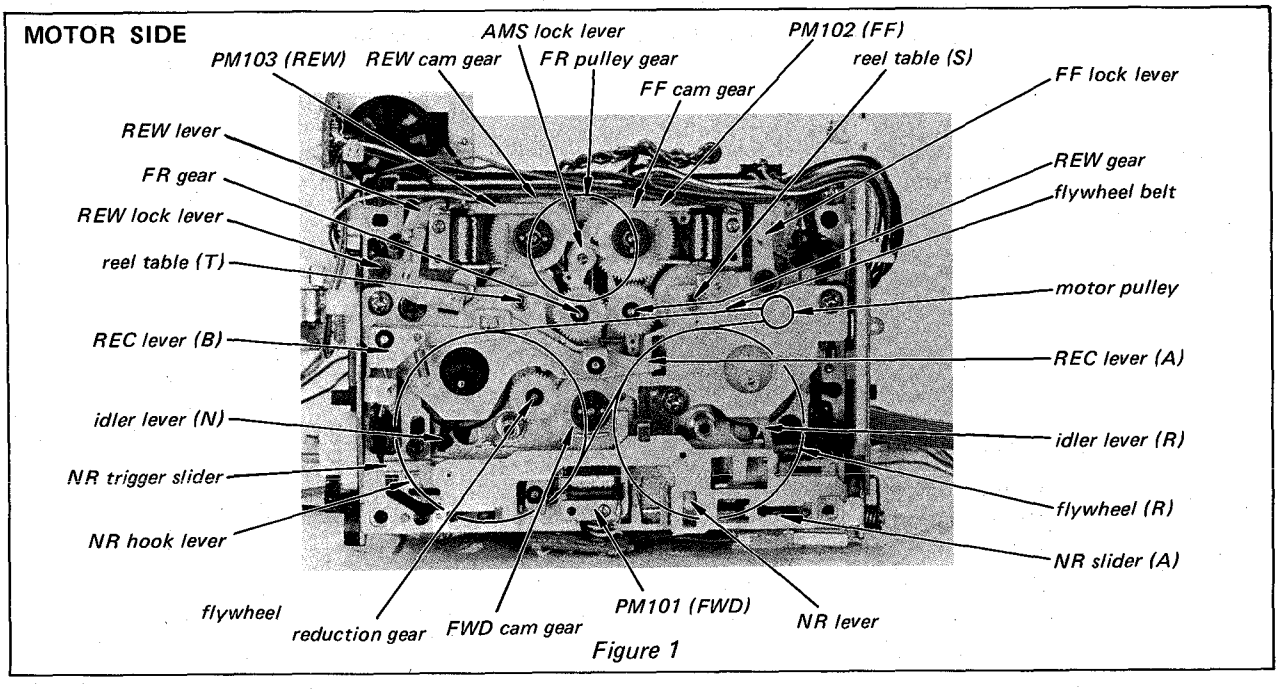




Figure 1

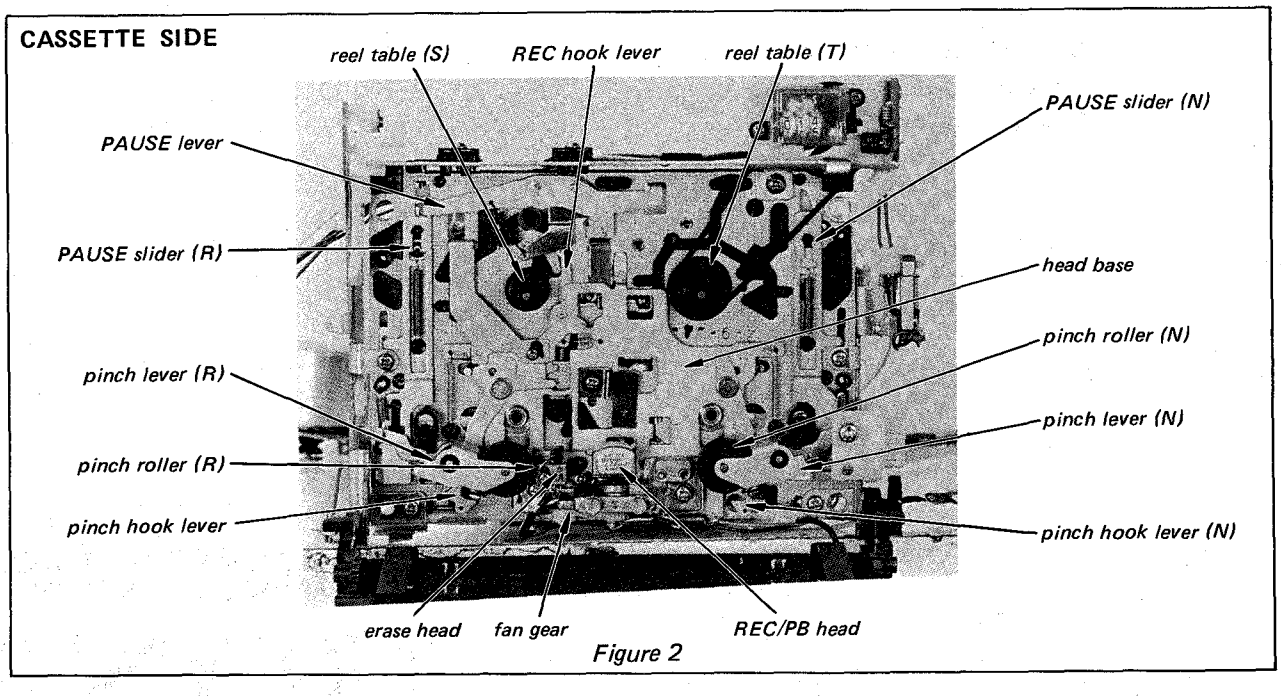



Figure 2

The operations of each mode are described below.

### 1-1. CAM GEAR KICK OPERATION

(1) FWD cam gear (Figure 3)

1 When power is not supplied to the plunger solenoid:
The S pole of the magnet is magnetically stabilized by the plunger solenoid PM101 (FWD) core section (a) so that the unnotched section of the FWD cam gear, which is incorporated into the magnet, is opposite the reversing gear. Therefore, even though the reversing gear is always rotating when the motor is on, via the drive gear fixed to the flywheel and the reduction gear, the FWD cam gear remains stable.

2 When power is supplied to the plunger solenoid:
S pole is generated at the PM101 core section (a) and N pole at section (b). The FWD cam gear is kicked in the counterclockwise direction by this generated magnetism, and engages with the reversing gear. The FWD cam gear rotates once, and then disengages at the unnotched section.

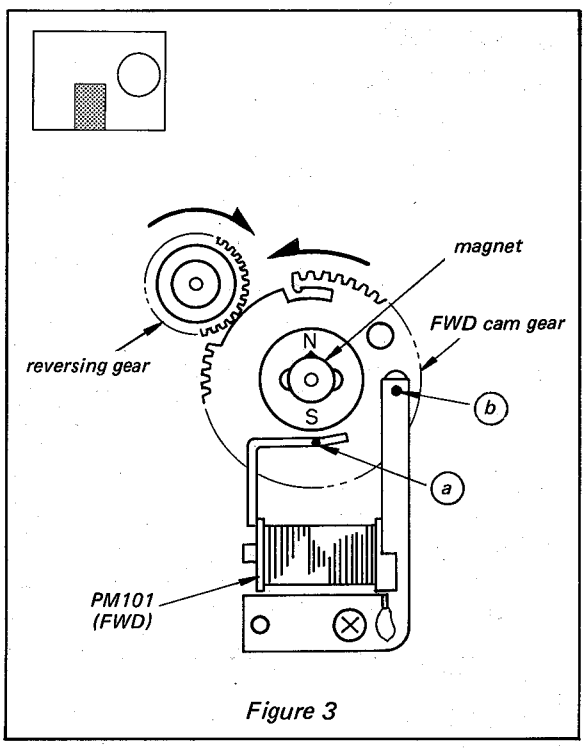


Figure 3

(2) FF cam gear, REW cam gear (Figure 4)

1 When power is not supplied to the plunger solenoid, the same as for the FWD cam gear, the S poles of the magnets which incorporate the FF cam gear and REW cam gear are magnetically stabilized by PM102 (FF) core section (c) and PM103 (REW) core section (f). However, the stable position of PM103 is 90° different from that of PM101 and PM102.

2. When power is supplied to the plunger solenoids PM102 and PM103, S pole is generated at cores (c) and (f) and N pole at cores (d) and (e), the FF cam gear and REW cam gear are kicked counterclockwise, engage with the FR pulley gear which is rotating via the flywheel and drive belt, rotate once, and then disengage at the unnotched sections.

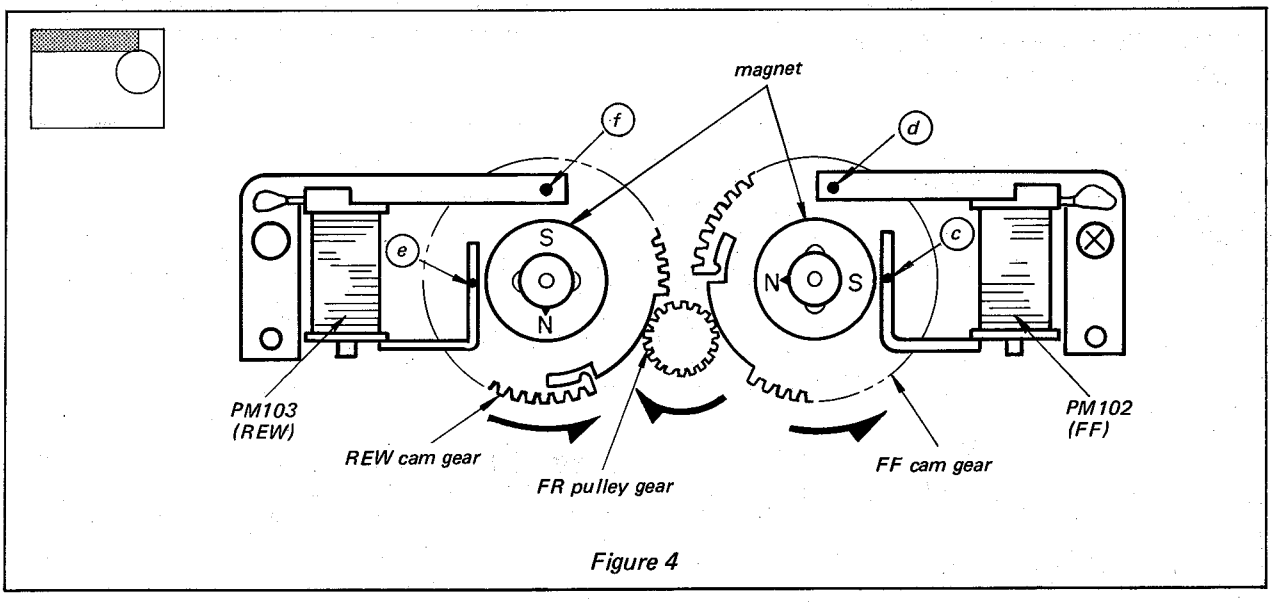
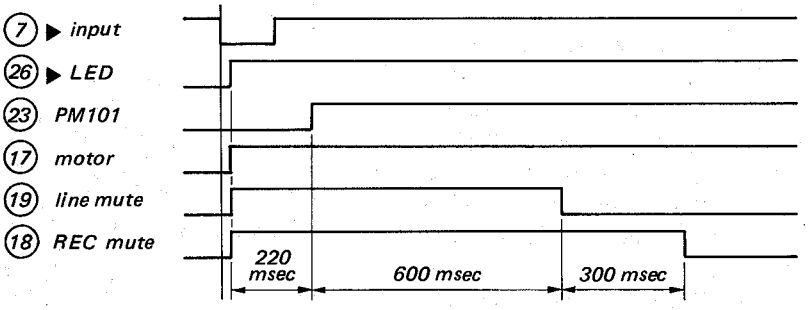


Figure 4

## 1-2. FWD MODE

IC701 Timing
STOP → FWD




*Timing Chart (1)*

(1) Power is supplied from the motor, and the flywheel, drive gear, reduction gear and reversing gear rotate via the capstan belt. Also, the FR pulley gear rotates via the flywheel and drive belt, although this is unrelated to this mode. (See Figure 5.)

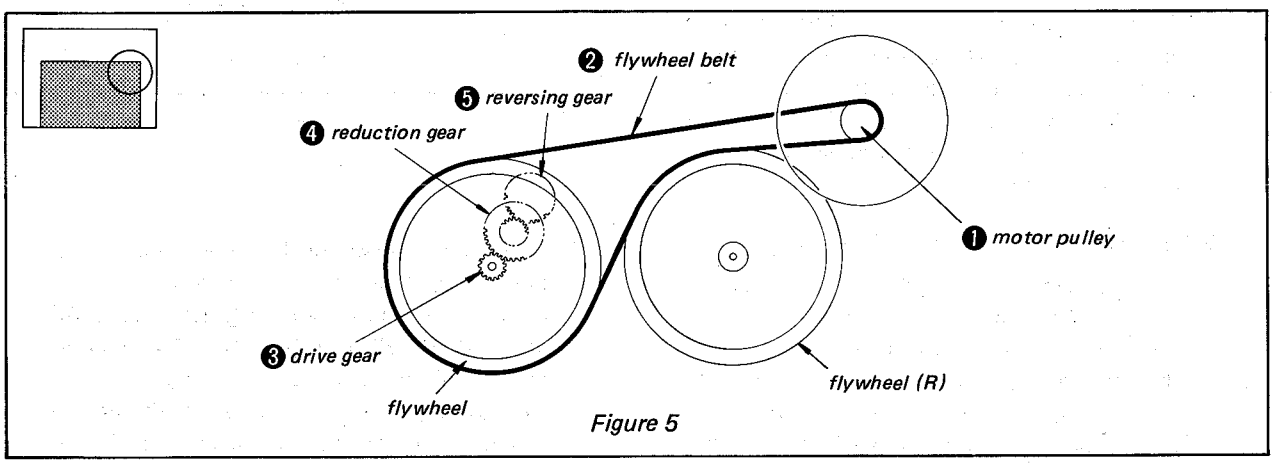



*Figure 5*

(2) Power is supplied to plunger solenoid PM101 and magnetism is generated. (Refer to Figure 3.)

(3) The FWD cam gear is kicked and engages with the reversing gear. (Figure 6)

(4) Because of FWD cam gear rotation, the cam shifts the NR slider (A) via the NR lever and turns on the MD power switch (S309). (Figure 6)

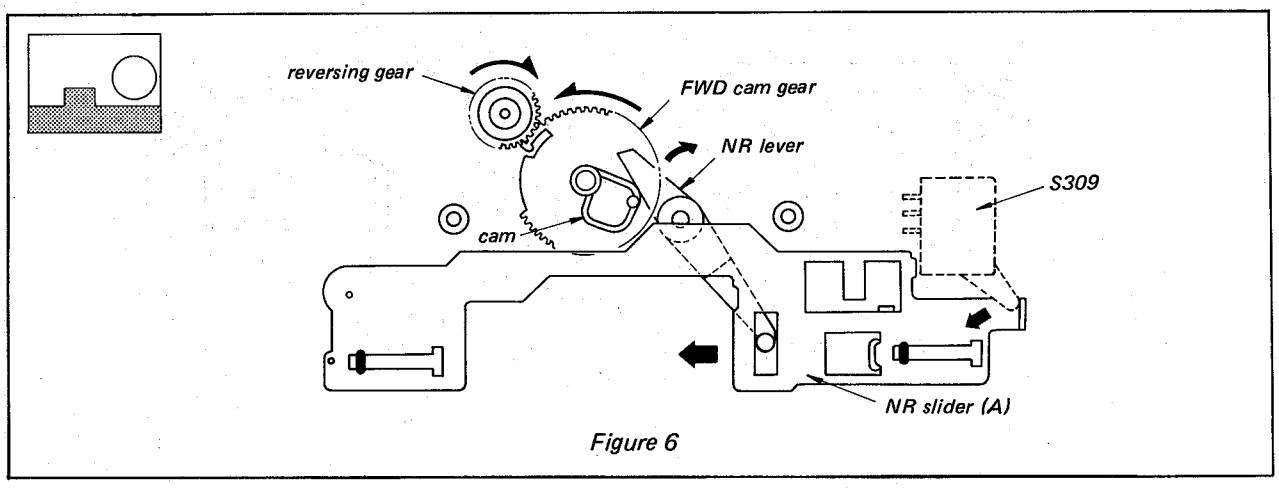



*Figure 6*

(5) With NR slider (A) at maximum displacement, the cam next moves the head base forward via the FWD lever. (Figure 7)

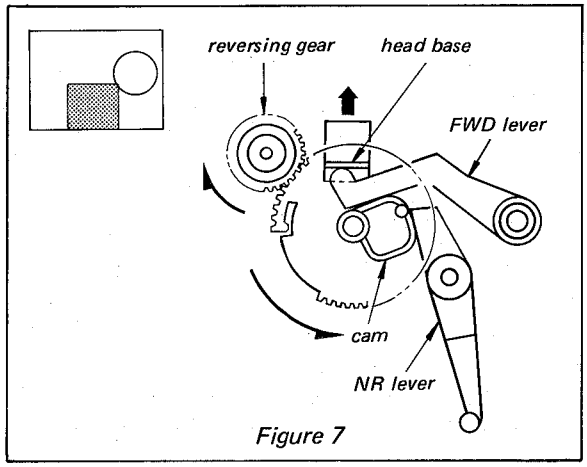


Figure 7

(6) NR slider (A) is fixed by the head base lock. (Figure 8)

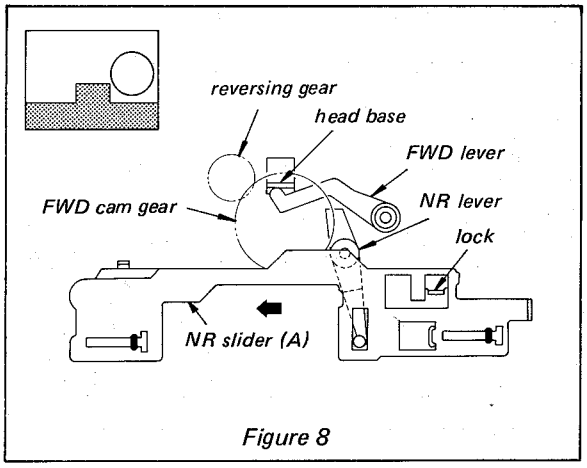


Figure 8

(7) When the head base moves forward, brake (S) and brake (T) separate from the reel tables, and then idler lever (N) presses against the drive gear which rotates in conjunction with the flywheel, and the reel table. Idler lever (R) is prevented from pressing by the NR slider (B) stopper. Also, NR slider (B) keeps pinch hook lever (N), which has its fulcrum on the top of the head base, hooked on the pinch lever (N) press spring (same for STOP), so when the head base moves forward, pinch roller (N) presses against the capstan shaft. (Figure 9)

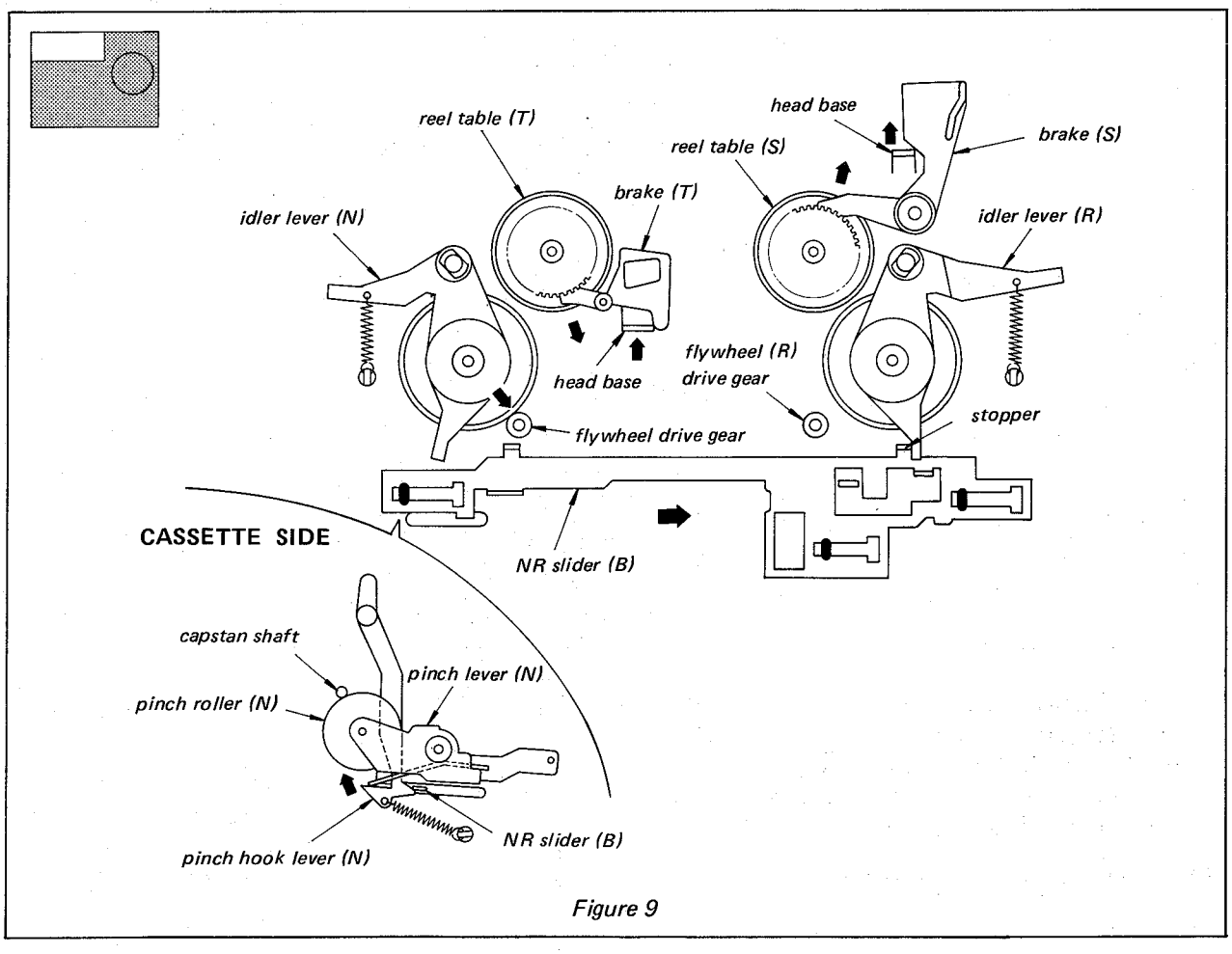


Figure 9

(8) When the head base moves forward the specified stroke, the FWD lock lever attached by the tension coil spring separates from the head base stopper, and the FWD lock lever moving core adsorption surface unites with the PM101 adsorption surface, is adsorbed by the magnetism and locks the had base. (Figures 10, 11)

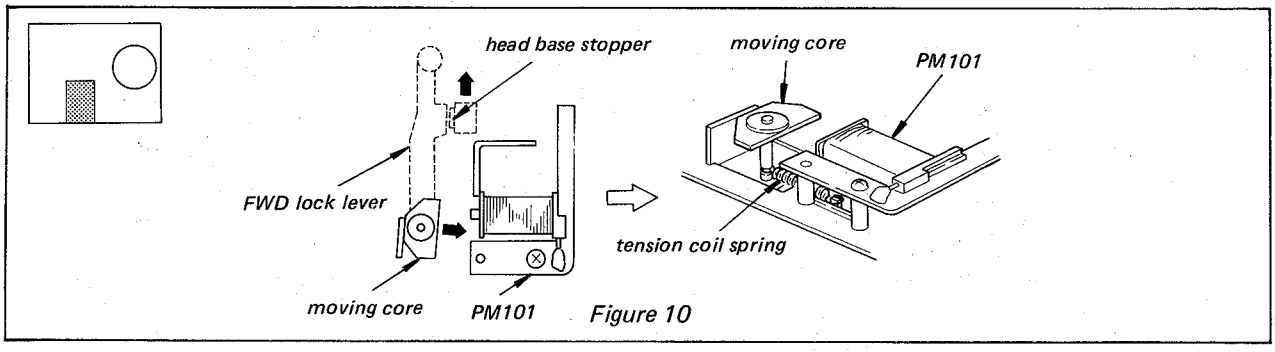



Figure 10

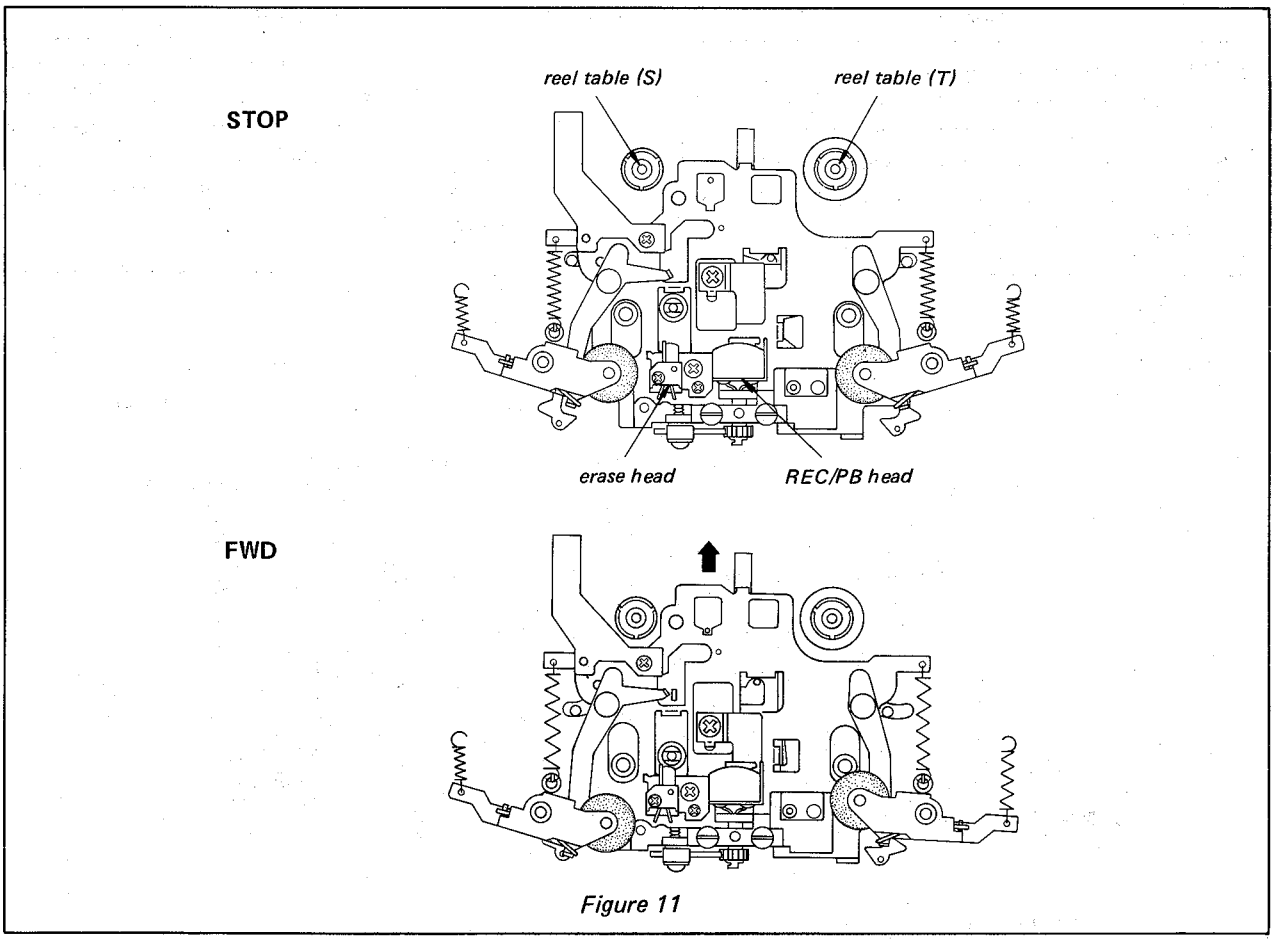



Figure 11

(9) After rotating once, the FWD cam gear is kicked again (because power is being supplied to PM101) but because the FWD cam gear stopper is locking the head base, it hits against the head base and rotation is prevented. (Figure 12)

(10) This completes FWD switch operation.

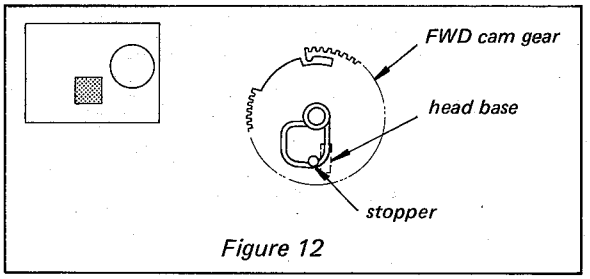
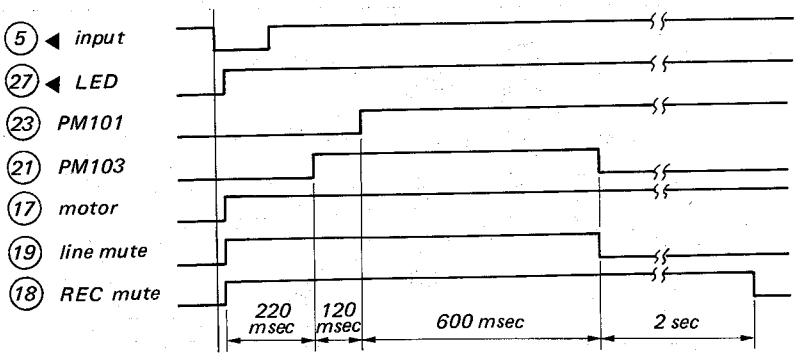



Figure 12

## 1-3. REV MODE

IC701 Timing

STOP → REVERSE




*Timing Chart (2)*

(1) Power is supplied to the motor. The flywheel, reversing gear, FR pulley gear, etc. rotate.

(2) Power is supplied to plunger solenoid PM103 (REW) and magnetism is generated.

(3) The REW cam gear is kicked and engages with the FR pulley. (Figure 13)

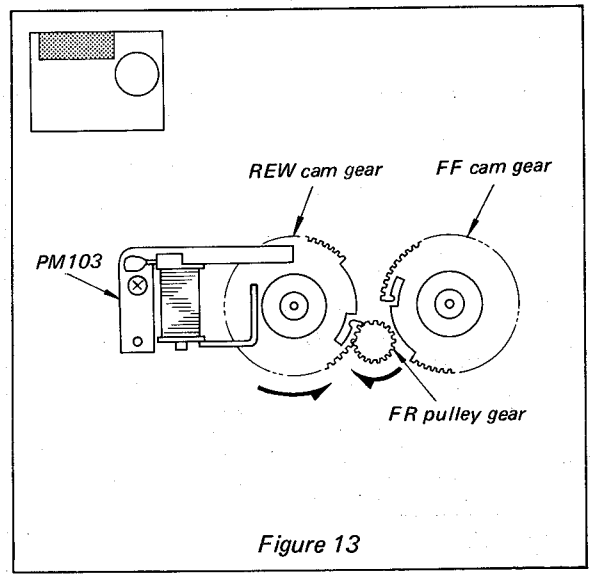



*Figure 13*

(4) Because of the REW cam gear rotation, the cam drives the NR trigger lever, and hooks the NR hook lever, the fulcrum of which is on top of NR slider (A), onto NR slider (B), via the NR trigger slider (Figure 14)

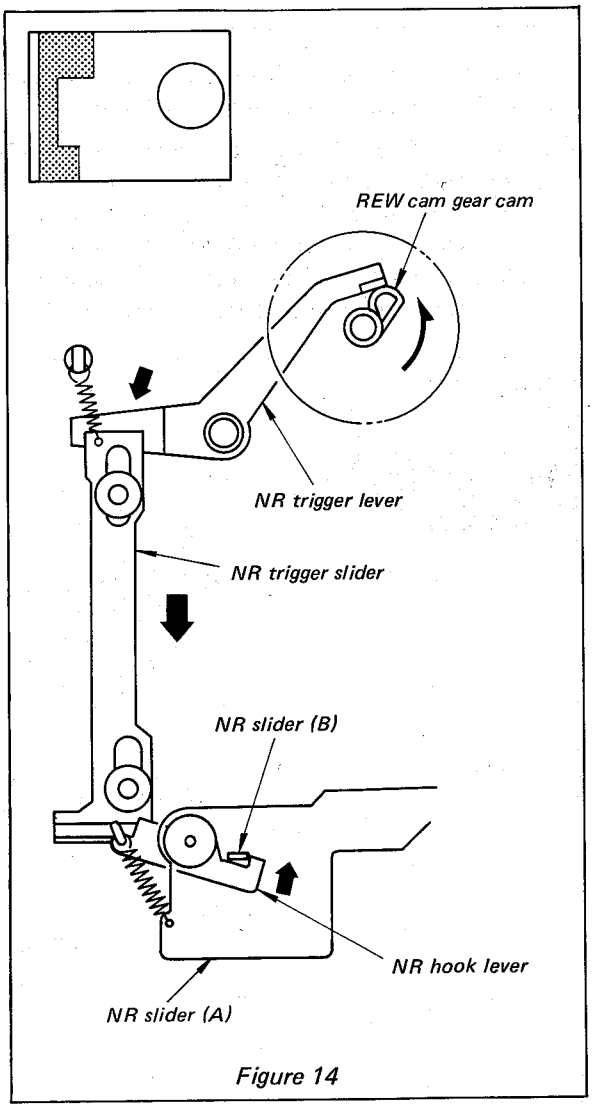



*Figure 14*

(5) Power is supplied to PM101, the FWD cam gear rotates, and the cam slides NR slider (A) via the NR lever. (Figure 15)

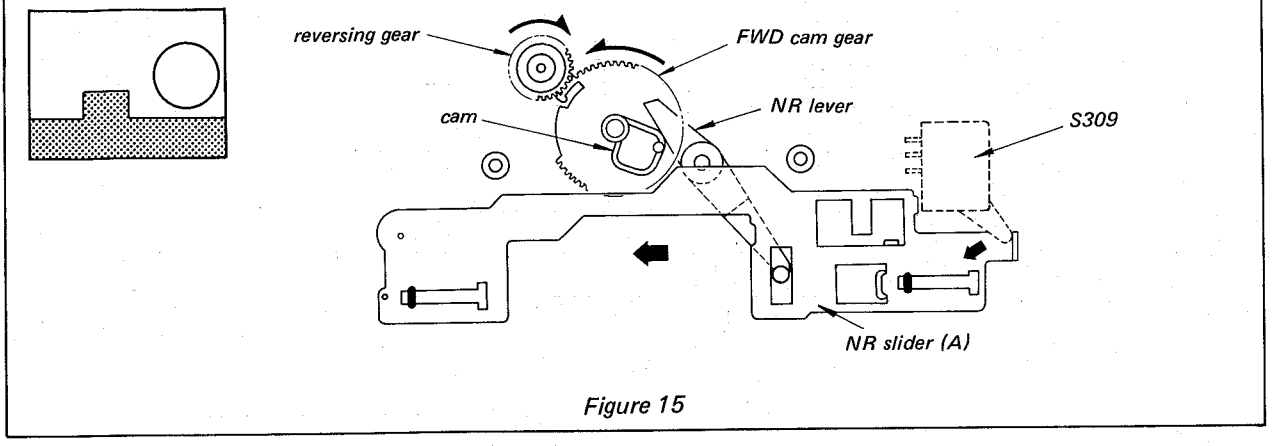



Figure 15

(6) NR slider (A) turns on the power SW, and also slides NR slider (B) via the NR hook lever.

(7) The shifting of NR slider (B) rotates the REC/PB head 180° via the ① fan gear and ② idler stopper separates from idler (R) and approaches idler (N). ③ Pinch hook lever (R) hooks on pinch roller (R) press spring and pinch hook lever (N) press spring is unhooked. (Figures 16, 17)

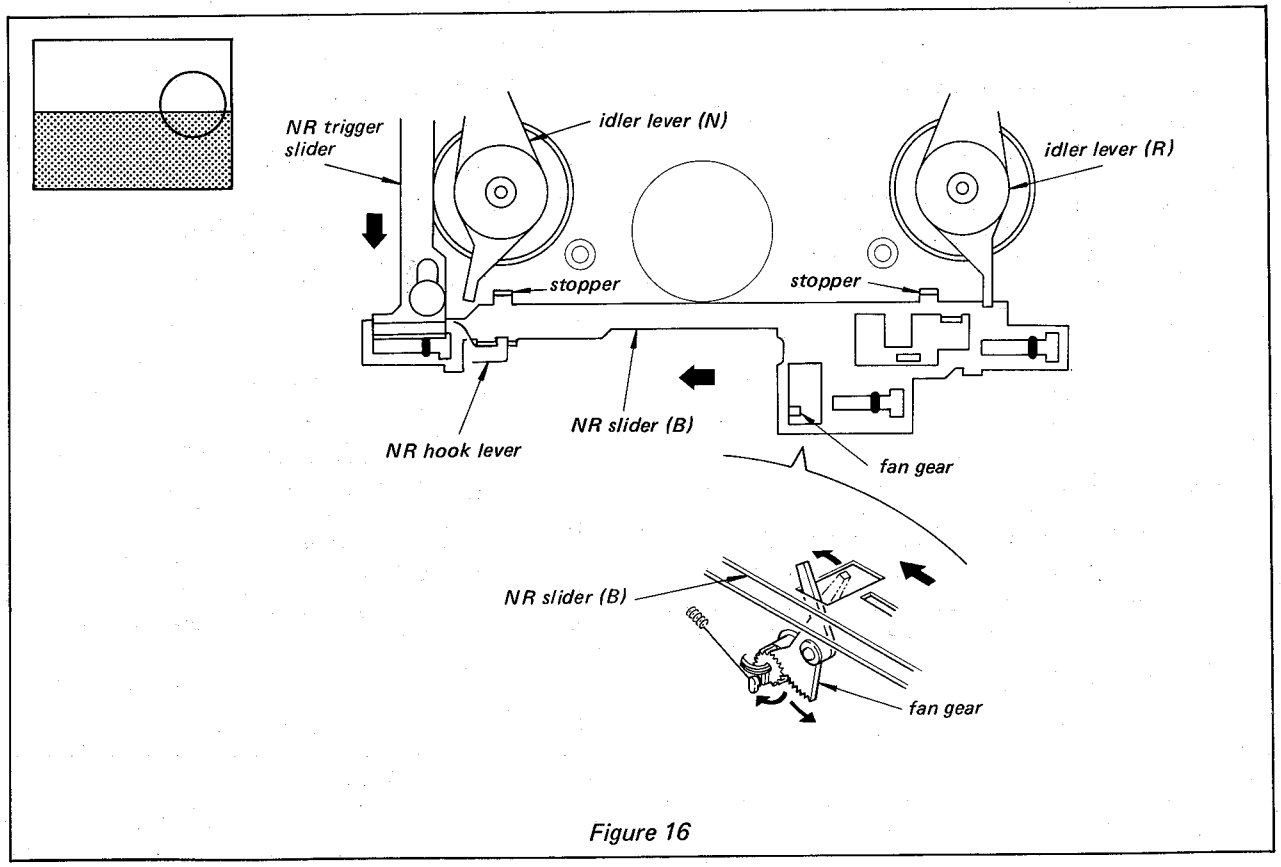



Figure 16

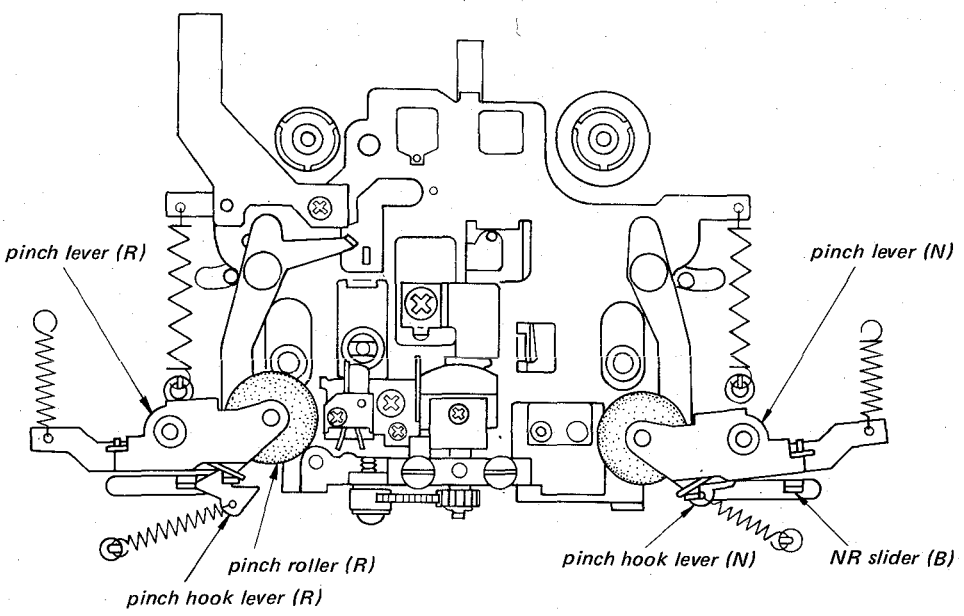



Figure 17

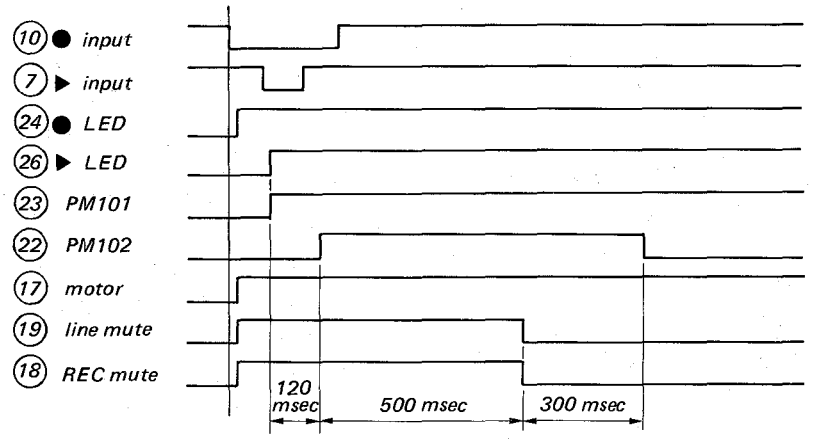
(8) The forward movement of the head base locks NR slider (A), NR slider (B), releases the brake, and idler (R) and pinch roller (R) are pressed together.

(9) The same as for FWD, the head base is locked by the FWD lock lever. Also, the REW cam gear rotates once, PM103 turns off, and is stabilized by the magnet.

(10) This completes the REV switching operation.

## 1-4. REC/FWD MODE

IC701 Timing
STOP → REC/FWD




Timing Chart (3)

(1) Power is supplied to the motor.

(2) Power is supplied to PM101, the FWD cam gear slides NR slider (A), and turns on the MD power switch (S309). (Figure 18)

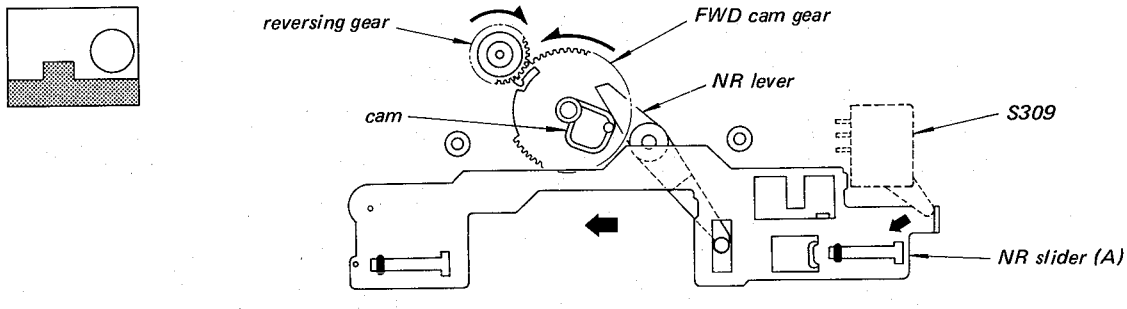



Figure 18

(3) Power is supplied to plunger solenoid PM102, and the FF cam gear engages with the FR pulley gear. (Figure 19)

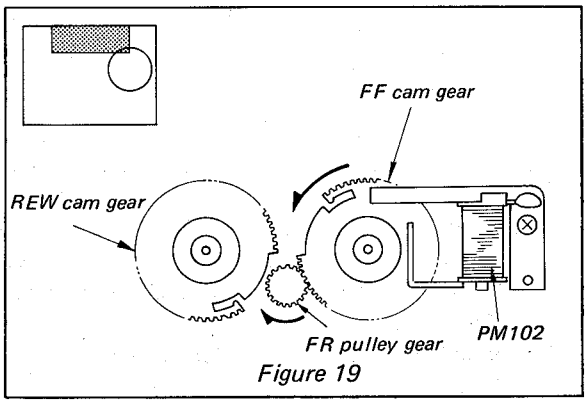



Figure 19

(4) Due to the rotation of the FF cam gear, the cam hooks the REC hook lever (which has its fulcrum on top of the head base) onto REC lever (A) via the REC trigger lever. (Figure 20)

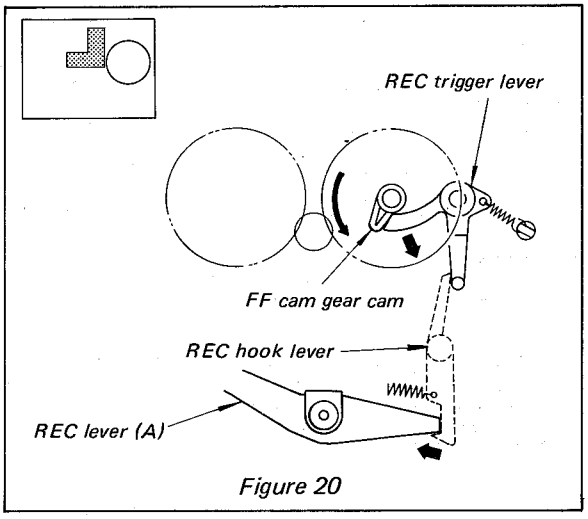



Figure 20

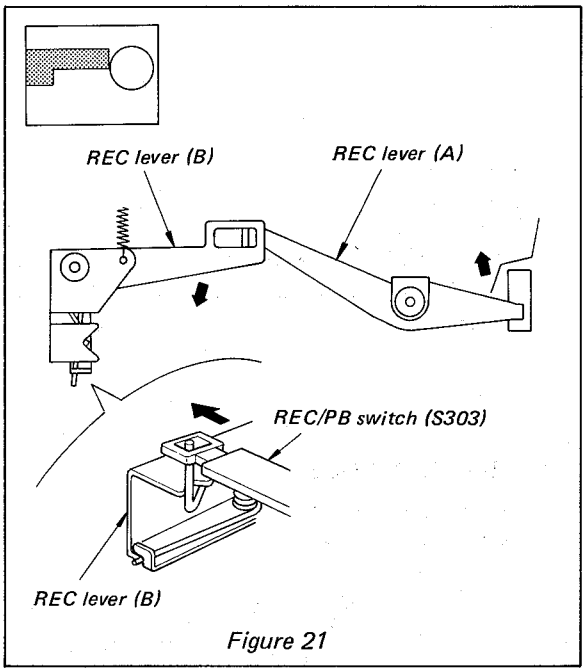



Figure 21

(5) In this state, the head base moves forward and drives REC lever (A). REC lever (A) switches the REC/PB switch (S303) via REC lever (B). (Figure 21)

(6) The same as for FWD mode, the brake is released, and idler (N) and pinch roller (N) are pressed together.

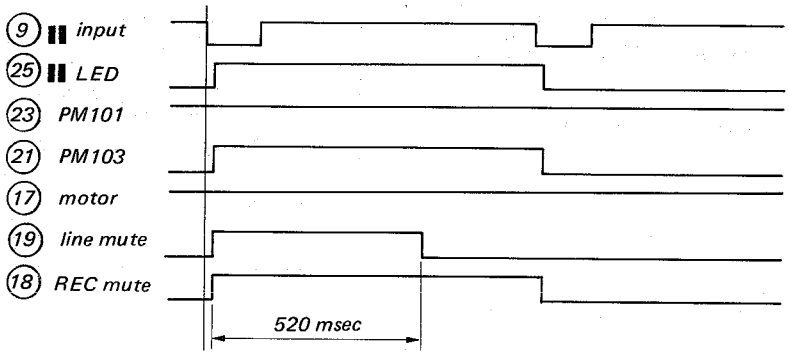
(7) The head base is locked. Meanwhile, the FF cam gear rotates once and PM102 turns off, and is stabilized by the magnet.

(8) This completes REC/FWD switching operation.

## 1-5. PAUSE MODE

IC701 Timing

When PAUSE button is pressed in FWD, REVERS or REC/FWD mode.




*Timing Chart (4)*

(1) Power is supplied to PM103 and the REW cam gear rotates.

(2) The REW lever is driven by the REW cam gear cam, and PAUSE slider (N) is shifted via the shaft fixed to the REW lever, while PAUSE slider (R) is shifted via the PAUSE lever. (Figure 22)

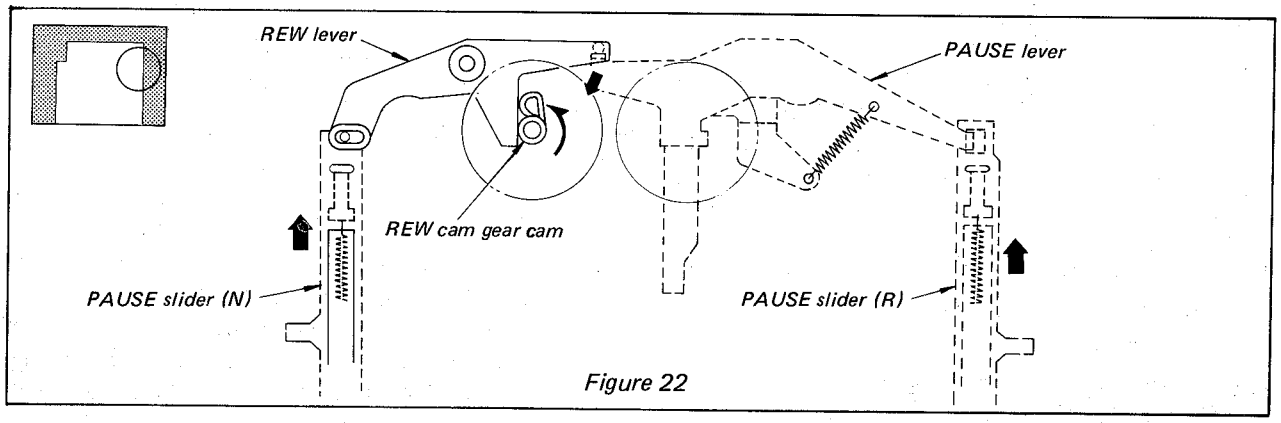



*Figure 22*

(3) When the PAUSE sliders shift, the idler and pinch roller pressure is released. (Figure 23)

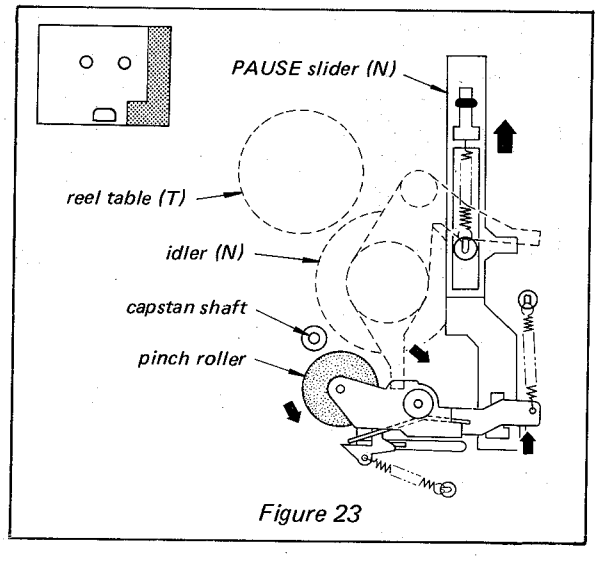



*Figure 23*

(4) When the specified stroke is reached, the REW lock lever is pressed against PM103 by the force of the attached spring and is locked by PM103 adsorption. When the REW lock lever locks, PAUSE slider (N), (R), PAUSE lever, and REW lever also lock. At the same time, the REW cam gear kick is prevented by the REW lever. (Figure 24)

(5) This completes PAUSE switching operation.

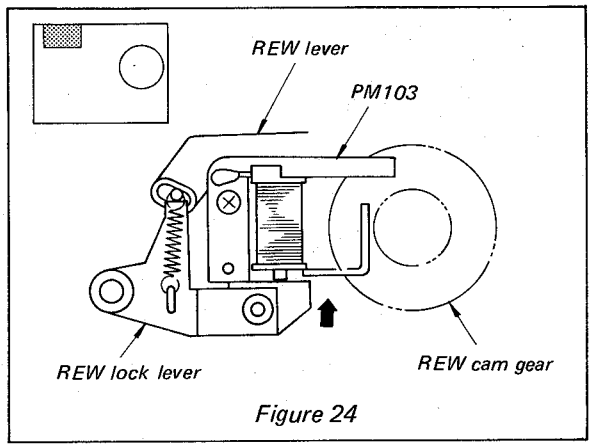
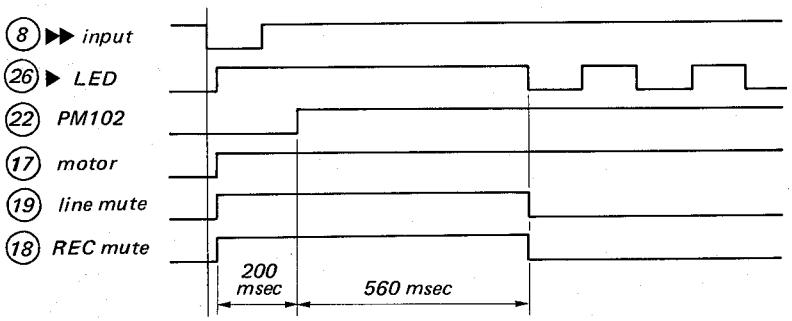



Figure 24

### 1-6. FF MODE

IC701 Timing

STOP → REW




Timing Chart (5)

(1) Power is supplied to the motor.

(2) Power is supplied to PM102, and the FF cam gear rotates.

(3) The FF lever is driven by ❶ FF cam gear cam. (Figure 25)

(4) ❸ Brake (S) is released by ❷ FF lever, ❹ gear release slider is moved, ❺ FR lever (A) swing prevention stopper is released, brake (T) is released by the spring attached between ❻ brake (T) and FR lever (B), and ❼ FR gear engages with FR limiter gear and T reel gear. This results in FF mode. (Figures 25 – 27)

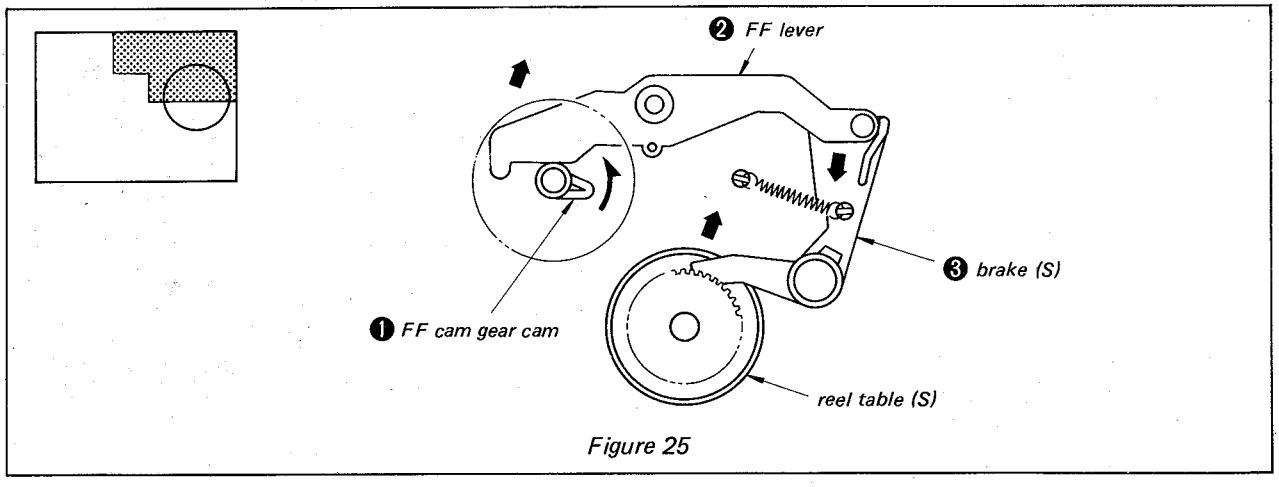



Figure 25

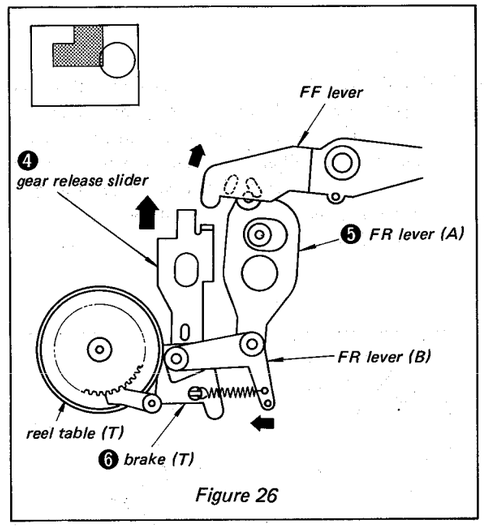


Figure 26

(5) When the FF lever reaches the specified stroke, the FF lock lever is pressed against PM102 by the spring and is locked by PM102 adsorption. This also locks the FF lever. (Figure 28)

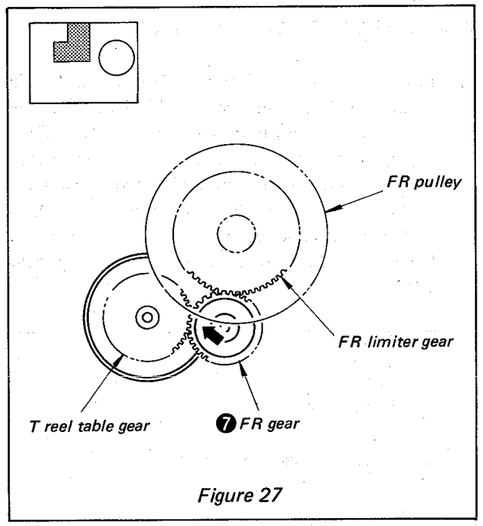


Figure 27

(6) Also because of the FF lever, the AMS lock lever stopper presses the FF cam gear cam and prevents kick. (Figure 29)

(7) This completes FF switching operation.

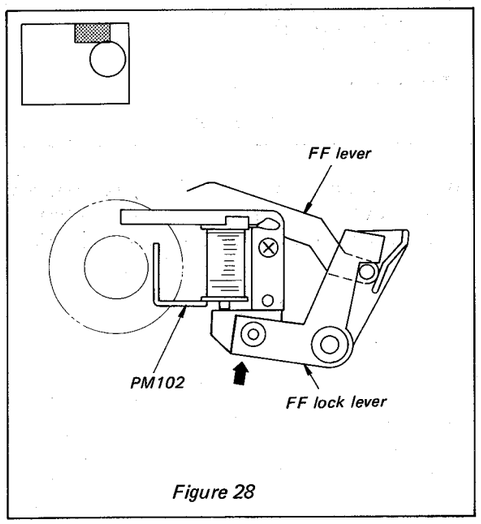


Figure 28

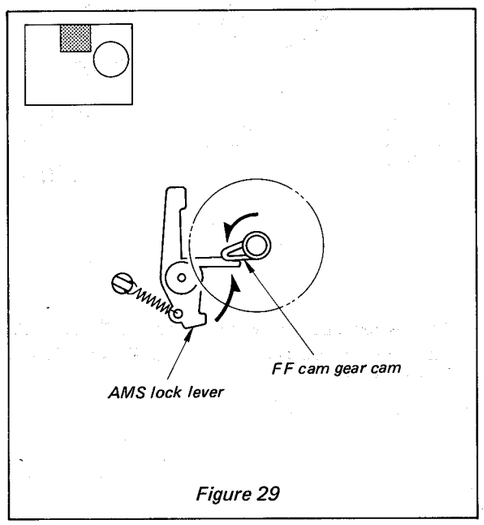


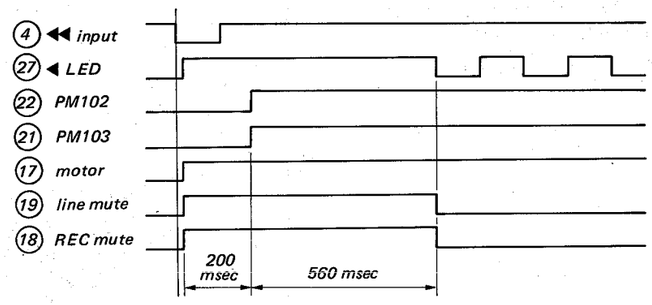
Figure 29



### 1-7. REW MODE

IC701 Timing

STOP → REW



Timing Chart (6)

(1) Power is supplied to the motor.

(2) Power is supplied simultaneously to PM102 and PM103, and the FF cam gear and REW cam gear rotate.

(3) The FF lever is driven by the FF cam gear cam and the REW lever by the REW cam gear cam. (Figure 30)

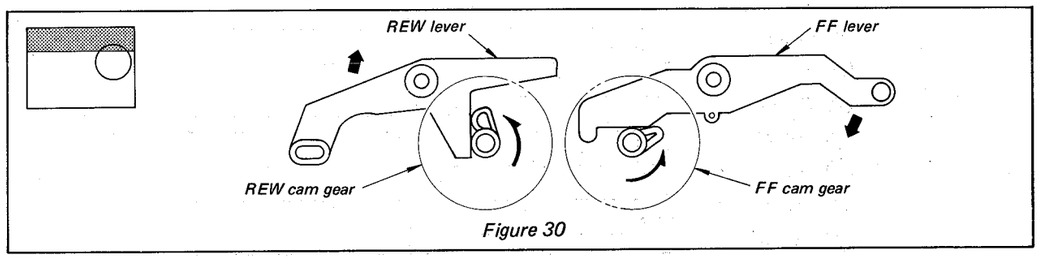


Figure 30

(4) The same as for FF mode, the brake is released and the FR gear engages with the FR limiter gear, while the FR lever (A) is driven by the REW lever via the PAUSE lever, and FR lever (B) moves in the direction of the S reel, and REW gear and S reel gear engage. (Figure 31)

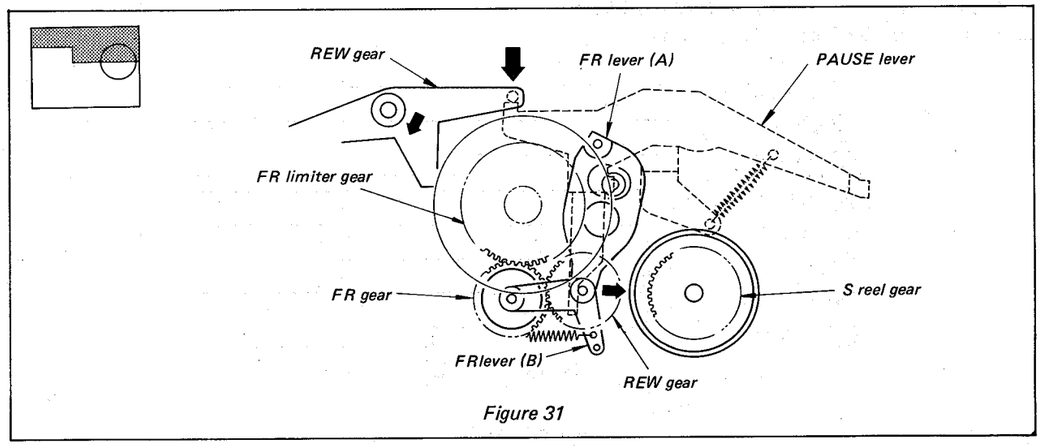


Figure 31

(5) From the above, the FR limiter gear → FR gear → REW gear → S reel gear connect, and REW mode results. (Figure 32)

(6) The same as for PAUSE mode and FF mode, the levers lock and cam gear kick is prevented.

(7) This completes REW switching operation.

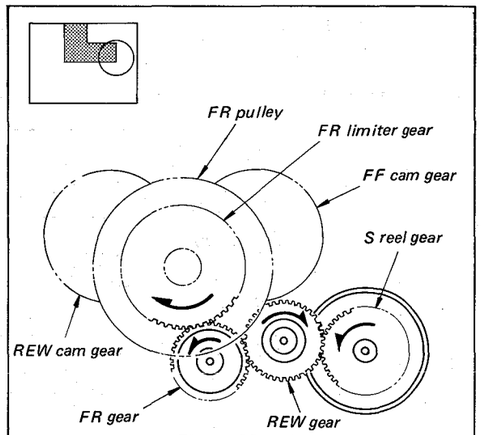
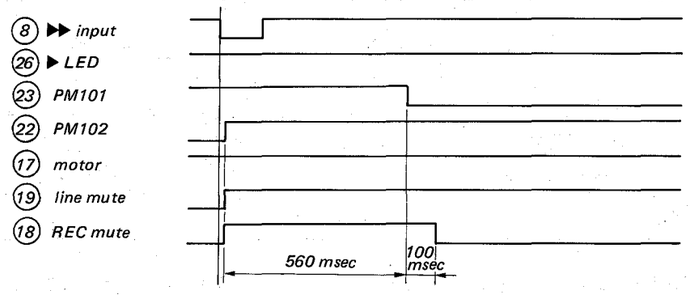


Figure 32

### 1-8. AMS MODE

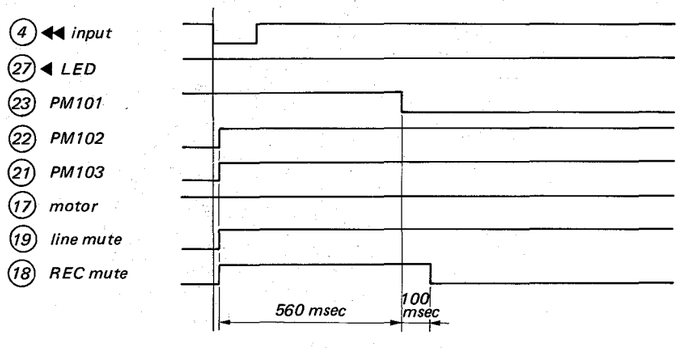
IC701 Timing

When FF button is pressed from FWD or REVERSE mode. (N · AMS · FF or R · AMS · FF)



Timing Chart (7)

When REW button is pressed from FWD or REVESE mode. (N · AMS · REW or R · AMS · REW)



Timing Chart (8)



### • AMS FROM FF OR REV MODE

(1) Power is supplied to PM102. The same as for FF mode, the levers, etc. operate and the FR gear engages with the FR limiter gear. It also tries to engage with the T reel table gear, but because of the cam shape of the forward moving head base, it does not. Also, the movement of the AMS lock lever causes the hook to come out at the bottom of the head base bent portion. (Figrue 33)

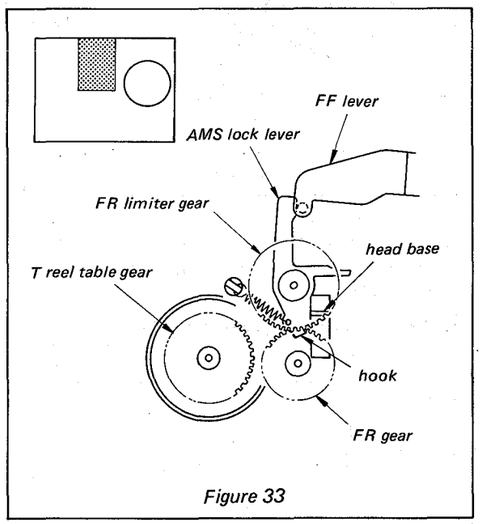


Figure 33

(2) If PM101 is turned off at this point, the head base is pulled back by the spring, but it hits the AMS lock lever hook and is stopped just at the AMS stroke. When the head base moves back, the idler and pinch roller separate, FR gear and T reel table gear engage, and FF mode results. (Figure 34)

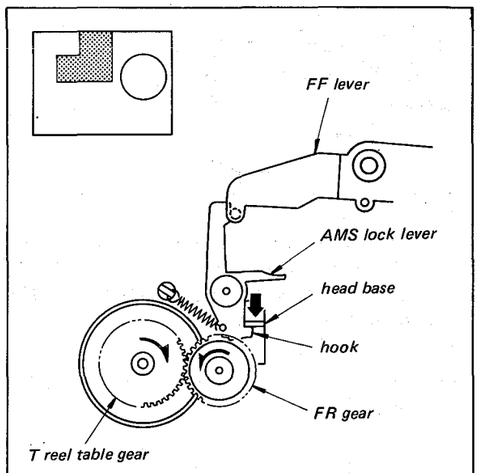


Figure 34

(3) This completes AMS · FF switching operation. For AMS · REW, power is supplied to PM102 and PM103 simultaneously, the same as for REW.

* In this explanation, wind up on the T reel is FF and wind up on the S reel is REW, regardless of FWD · REV.

# SECTION 2
# CIRCUIT DESCRIPTION

**BLANK SKIP OPERATION:**

For this function, if no signal state continues for more than approximately 12 seconds during playback, the tape is fast forwarded to the top of the next selection.

Audio signal double voltage rectification.

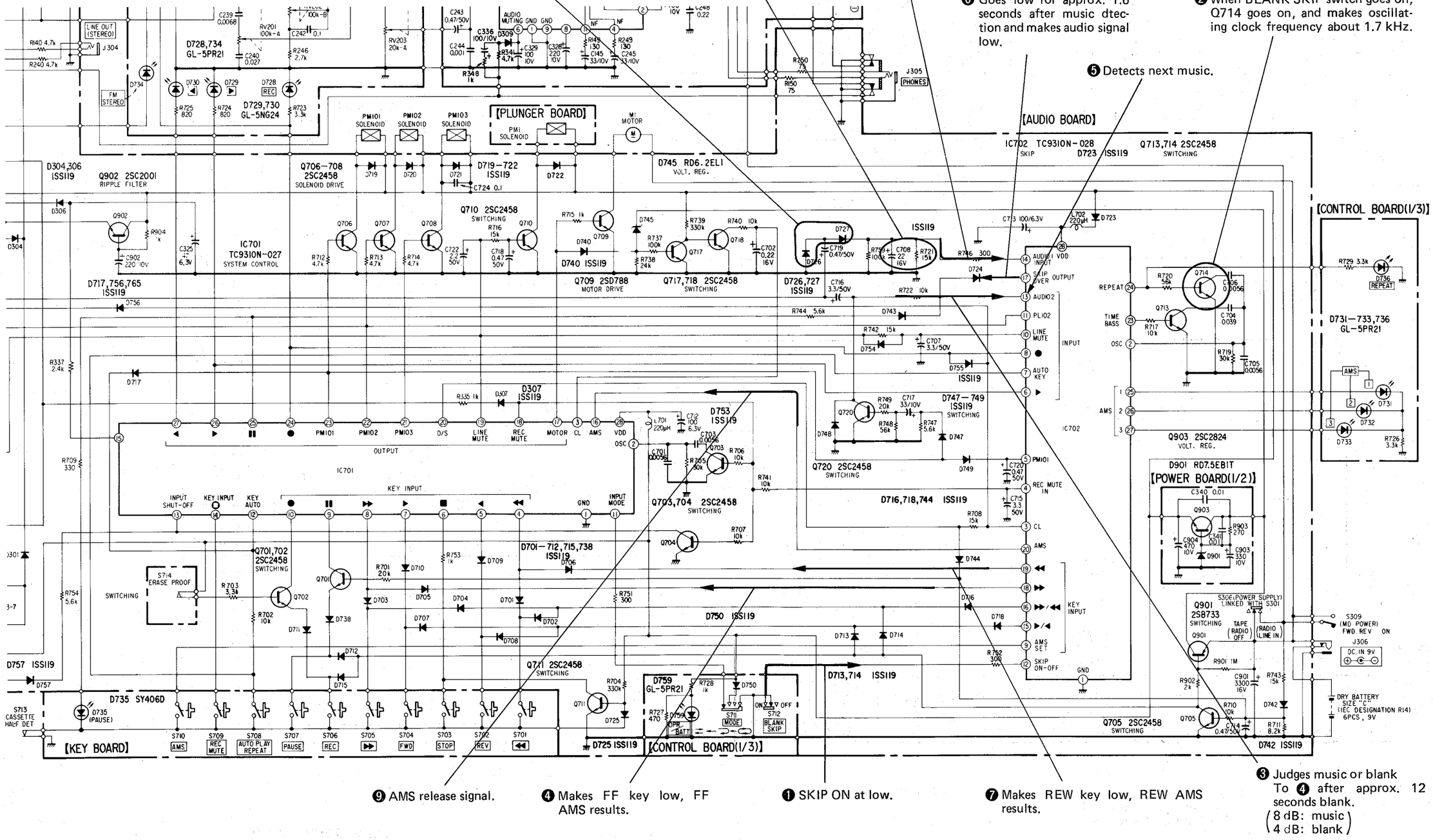
Determines AMS fall time constant.

❽ AMS between selection detection (blank)
(Less than 2.5 V: blank
More than 3.0 V: music)

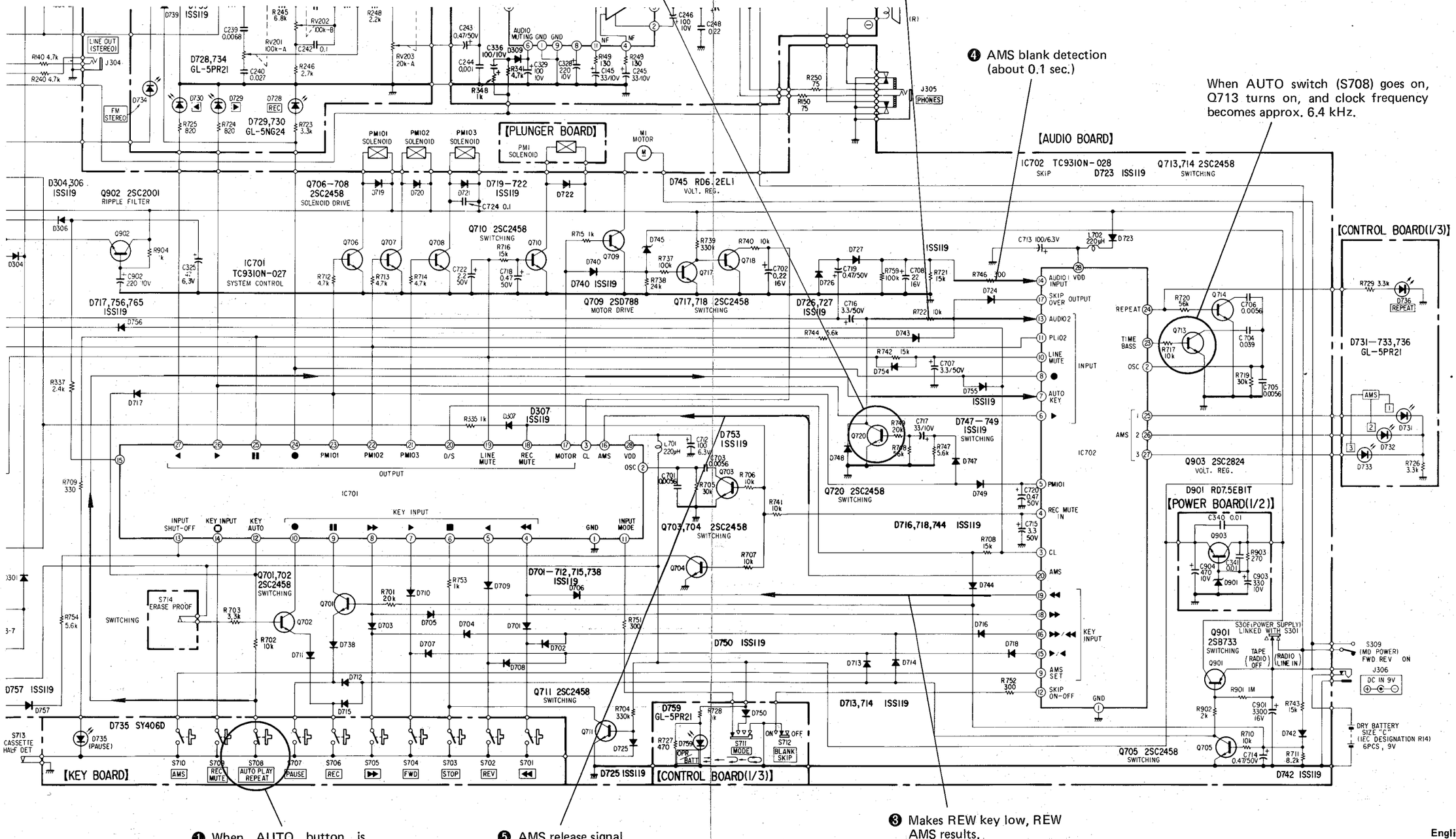
❻ Goes low for approx. 1.6 seconds after music dtection and makes audio signal low.

❷ When BLANK SKIP switch goes on, Q714 goes on, and makes oscillating clock frequency about 1.7 kHz.

❺ Detects next music.



**REPEAT OPERATION:**
Repeat a particular selection three times.



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